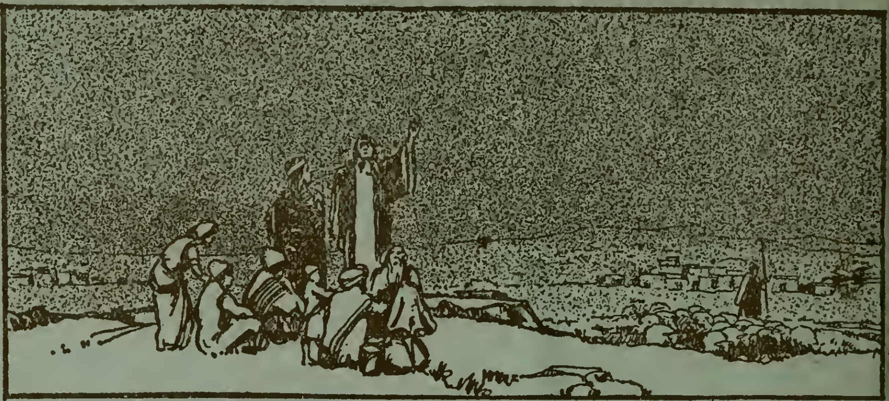

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THE FATE OF EMPIRES
DEPENDS UPON THE
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OF YOUTH
ARISTOTLE

MEDIEVAL

COLONIAL

THE SECRET OF EDUCATION LIES IN RESPECTING THE PUPIL

EMERSON

PIONEER

MODERN

T.W. STEVENS

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PUBLIC SCHOOL METHODS

Project Edition

Fully illustrated from
photographs, paintings
and original
drawings

VOL. IV

SCHOOL METHODS PUBLISHING CO.
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Kindergarten; Primary Reading; Plans; Primary Language; Plans; Story-Telling, Dramatization, Games, Songs; Construction Work.

Volume Two

Nature Study; Plans; Phonics; Number; Plans; Drawing; Picture Study; Spelling; Penmanship; Use of the Senses.

Volume Three

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Volume Four

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Arithmetic; Plans; History; Plans; Civil Government; Handcraft; Special Day Programs (Intermediate and Grammar Grades).

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INTRODUCTION

BY DR. CHARLES A. MCMURRY

Beginning with Volume Four of PUBLIC SCHOOL METHODS, we are entering those studies which mark a new stage of child life. The work of the three primary grades is left behind; a new group of important studies comes into view, and a new attitude toward studies is seen in the children. They have learned how to read, but now they are to read in such a way as to learn how to study. They have reached the point where they require less of fairy story and early myth and more of the real and practical—at least less of the purely fanciful and more that corresponds to life out of school.

The intermediate grades—fourth, fifth and sixth—have not yet received the attention from thinkers and educators that they deserve. The primary grades and the grammar school have thus far monopolized too much attention. The fourth, fifth and sixth grades have been allowed to drop into a dry formalism which has had a rather hard and depressing effect upon the children. The introduction of many new studies and the overloading of the course with too many subjects are partly responsible for this poor result in intermediate grades.

The time is now ripe for a change in the studies and methods of handling topics in these grades. The lessons should be made much more interesting and enlivening. There should be more self-activity and real effort in study on the children's part. The course of study needs to be enriched and simplified, and whatever is taught should be more thoroughly learned and understood. There should be less scattering over many things and more concentration upon the few important things. To attain these ends several important features have been introduced in PUBLIC SCHOOL METHODS; these may be briefly named or catalogued as follows:

The dealing with projects as large units.

The type study, which is an enlarged and expanded form of the old object lesson.

The socialized problem, or method, of handling class recitations.

The correlation or mutual coöperation of important studies.

The new form of story telling, appropriate to intermediate grades.

The burden of serious effort in study should be transferred from the teacher to the boys and girls.

Community interest and coöperation should be steadily encouraged.

A few other essential points will be referred to later in this introduction showing the breadth of improvement needed in these grades.

The *project idea* is fortunately commanding much attention. The project is the conversion of studies into an active enterprise in which boys and girls participate freely and energetically. Projects are also those plans which children undertake of their own free will, as building a tree-house, or digging a cave, or writing a letter; or they may be life-projects of a larger scope undertaken by cities, communities or states, as the boring of a tunnel through the mountains, bridging a stream or damming a river to secure water power. Such enterprises, or projects, whether undertaken by individuals or by groups of people easily enlist the interest of children. They are concrete and practical, and illustrate the bold undertakings of leaders among men. They have often a strong biographical interest. They have in them the flavor of real life, and transfer a child's interests from the school over into practical affairs, and boys and girls have a natural tendency and desire to mix up with large energetic projects of the real world.

The *type study* is a large unit of instruction, elaborately and fully worked out in concrete form, as the Mississippi River, as a type on navigable streams; Pike's Peak, as a type of high mountains; the story of Bruce, as a type of national heroes, or New Orleans, as a type of great seaports. The type study, as illustrated in many cases in PUBLIC SCHOOL METHODS, is a full, concrete description of some first-class illustration of an idea. It is an expanded object lesson wrought out into a full picture, as an account of the construction of the Panama Canal, or an irrigation project, or Mount Shasta as a typical volcano. The type study and the project often overlap, for many projects are good examples of type studies. In its second stage the type study is expanded by means of comparison with similar cases of rivers, mountains or cities into a comprehensive survey of a large group of kindred objects. A full understanding of one type, followed by comparisons, leads to a complete mastery of a large group of important subjects scattered perhaps far and wide through the world. The type is thus a remarkably effective means of simplifying knowledge, that is, of gaining a full understanding of many things by taking time thoroughly to understand one.

The *socialized recitation* is a class exercise in which the children work out some coöperative plan for the study or discussion of an important and worthy study project. A project for organizing a school room into a school city and for discussing freely, under their own management, the interests of the school city, may lead naturally to a socialized recitation or to a series of them. Any type study can be worked out in this way through the coöperative investigation and report before the class on the subject. A socialized recitation is thus a method of dealing with important units of study as class problems, in which the class becomes organized to carry out such a plan under its own chosen leaders, but with such advice and suggestion as a teacher may feel called upon to give.

The *correlation of the important studies* involves the gathering of knowledge materials from subjects like history, geography, science, and perhaps from literature and mathematics, around one central topic. A far-reaching topic naturally requires knowledge materials from several studies, as the story of Columbus, from history, geography and science, and even from literature. The separation of these facts into distinct studies prevents the child from seeing them in their natural and important relations. At the risk, therefore, of breaking over the boundaries from one study into another, we require this correlation of studies because important topics can never be properly understood except by close correlation from study to study. The reason why topics are big is that they must reach out far enough to describe a subject in its important relations, without regard to the number of studies involved. Big topics must have a free range; in no other way can children learn how to think properly. The narrow boundaries of the separate studies are too close to allow a child to think out an important topic. This narrow kind of study tends to dull memorizing with a minimum of real thinking.

Story-telling, in an enlarged form, needs to be mastered by teachers in fourth, fifth and sixth grades. Teachers in primary grades have mastered, in many cases, the art of story-telling; it is a remarkably fruitful method of handling the best subjects in primary grades. This same art of story-telling on a larger scale, applied to biography and travel and invention, is greatly needed in intermediate and grammar grades. It will give the teacher a full command and easy mastery of these large projects and types which we have been discussing. A mastery of concrete description and full narrative and dramatic scenes is extremely valuable in these grades; it is the only thing that can lift instruction out of the dull routine into which it has fallen. The work of these middle grades is often dull, abstract and tedious; it requires to be enlivened by vivid instruction. The story of Boone, of Columbus, of William Penn, of Robert Fulton, of Florence Nightingale needs to be opened up by a wide-awake teacher who knows how to tell a first-class story. It is one of the best means of introducing the teacher to the art of teaching, in a vital way.

Story-telling as a means of enlivening the studies of intermediate grades is so essential that a fuller treatment of this mode of presenting topics will be given later in this volume as a special encouragement to teachers.

Good story-telling by the teacher should be balanced by the requirement of downright *serious effort* by the pupils. As a usual thing teachers help children too much over the hard places. Teachers are too soft-hearted; they do not require children to think strongly. After a story has been well told, the children should be required to reproduce it in full without help. As a usual thing, children show but little good reciting; they do very little serious thinking. This is the teacher's fault. The burden of effort, after the teacher has done his part well, should be transferred to the children, and they should be held to full, thoughtful answers, and to complete, unaided recitations.

The large projects and type studies are a direct means of stimulating children into coöperative, united effort. The world to-day needs citizens who have learned to work together in planning and carrying out useful projects. The school itself is a community, and it has community problems and interests, as the school yard and garden, the proper decoration and improvement of the school house and premises, the providing and care of a library, the organization and management of a literary society and the coöperative working out of large topics in class-room instruction, such as the building of the first Pacific railway, the study of the city water supply and the campaigns against the housefly and mosquito.

Special appeal is made to the pupils of the grammar grades in such subjects as *Arithmetic*, *History*, *Civil Government*, *Personal and Community Hygiene*, *Vocational Guidance* and *Thrift*. The necessity for a thorough knowledge of English to one's success in any calling is strongly set forth in the chapters dealing with that subject.

In the chapters treating of community interests — *Personal and Community Hygiene*, *The Community Center*, *Vocational Guidance* and *Thrift* — *Public School Methods* has taken advanced ground, realizing that these movements have already become important factors in shaping our educational policy for the future. Superintendents and other school officers will find much of interest and value in these chapters. Because of the close relation of these chapters to the entire work, they have been placed in the *Teacher's Guide*, thus making them convenient for reference.

The chapters on *Agriculture*, by Prof. Lancelot, will interest not only teachers of rural schools and farmers, but city teachers and all who are studying the "Back to the farm" movement and the economic problems confronting the home. The subject is presented from the viewpoint of the teacher and the work is practical throughout. It can be used in any school and by any teacher. These chapters and that on *Domestic Science* should appeal to a large number of young men and women in the home as well as those in school.

The chapter on *Special Day Programs* in Volume V is designed for the intermediate and grammar grades. Some selections are suitable for the third grade, and some selections in the programs in Volume III are suitable for more advanced grades. By making selections from each set, excellent programs for ungraded schools can be made. Moreover, these programs are replete with selections from standard authors, and their study will enable the teacher to become familiar with much that is best in literature.

In the chapters *Adolescence*, *Psychology* and *Methods of Teaching*, all edited by Dr. Bagley, Professor of Education, Columbia University, New York City, the underlying principles of mental development and the laws of teaching depending upon this development are clearly set forth. They contain the foundations of pedagogy in a nut shell.

The chapter *The Dictionary and How to Use It* was prepared by an expert on the editorial staff of G. C. Merriam & Company. Its study is recommended to every teacher. It contains matter not found in any text-books, but of great value in teaching English. The teacher who becomes familiar with this chapter and makes use of the directions it contains will soon attain a mastery of English to which she never expected to attain. Moreover, she will so train her pupils in the use of the dictionary that they will acquire the *dictionary habit* early in life.

The *Table of Contents* in each volume enables the reader to find at once the subdivisions of the chapters.

The *Departments by Volume* following the Title Page in each volume enables the reader to locate any subject at a glance. A complete analytical index locates definitely every topic in the work, and also serves as a guide in correlating affiliated subjects. Readers are urged to use this index.

These are some of the progressive features of PUBLIC SCHOOL METHODS. They are in line with the best efforts that are being made to improve the schools. The wide-awake teacher must take these things into consideration and should seek the best means of improving himself by trying out these plans in his regular school classes.

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CHAPTER ONE

READING

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INTRODUCTION

"Through reading knowledge is made cumulative, so that one generation may stand on the shoulders of the preceding. It is not its intellect that renders the modern world superior to antiquity, but its intellect, plus the heritage of two thousand years of thought and discovery transmitted to it through books." — Koopman.

1. Value. Through reading we acquire knowledge of the thoughts and achievements of others. Ability to read enables one not only to learn of the thought and discoveries of the past; it also keeps one in touch with the progress of the world at the present time, and gives one opportunity to take advantage of new discoveries and inventions. Again, reading is a source of pleasure, and it affords an excellent means for occupying our leisure hours; and, lastly, reading is a means of culture.

2. Purpose of These Chapters. A successful teacher of reading must be a good reader herself. To be a good reader she must not only be able to read aloud so that others may readily get the thought and effect of what she reads, but she must at the same time be a student through silent reading and make use of her influence to get her pupils to employ this ability to read, to the end that they may make progress in knowledge and power. The teacher who is able intelligently and with good expression to read whatever comes before her in any and all of her classes has, by reason of this accomplishment, almost unlimited power in the way of instruction. She will gain this ability because through the accomplishment she gets a clearer insight into what reading really means, and in the gaining of this insight she will also increase her skill and power in the treatment of all subjects. In addition to this ability to read well, the teacher should also be conversant with the mechanics of reading and the best methods of teaching it, as well. She needs to know many things about reading which the pupils do not need to know. For illustration: The teacher should know the principles underlying emphasis, inflection, pitch and force, but her pupils do not need to know these rules in technical form; in fact, a knowledge of them is a hindrance rather than a help to them.

While a teacher who is a good reader may succeed fairly well in teaching the subject without a knowledge of methods, it is certain that she will succeed much better with such knowledge, because it will enable her, first, to realize the purposes for which reading is taught; and second, the means by which these purposes can be secured through the easiest and most logical steps and with the least waste of time and energy. It is the teacher's part in this work to become a good reader and to master the principles, laws and methods pertaining to the teaching of the subject.

The purpose of these chapters, then, is twofold: To call the attention of the teacher to those principles and rules which she should know, and to present such methods as will be most helpful in teaching the subject in the intermediate and grammar grades. While the chapters are intended to begin with work which corresponds to that of the fourth grade in any well graded school, and presuppose on the part of the pupils a knowledge of the mechanics of reading, as well as ability to read intelligibly such subject-matter as falls within their understanding and capacity, yet the writer of these chapters understands very clearly that such ideal conditions as this supposition calls for are seldom, if ever, met. Therefore, points are emphasized which with some classes will need little or no attention, because they have been mastered. On the other hand, the emphasis upon these points will be a guide to those teachers who find that their pupils are deficient in matters which are vital to their success in reading. It is always to be remembered that the same underlying principles and laws and the same general method for teaching reading apply to all grades, the difference consisting in the elaboration of these principles and laws to fit them to the capacity of the pupils as they advance in their work from one grade to another.

3. Kinds of Reading. Reading as treated in the public schools is of two kinds, generally known as silent reading and oral reading. The first consists in getting the thought from the printed page, and the second adds to this the giving of that thought to another. Silent reading is therefore a thought-getting process, and oral reading both a thought-getting and a thought-giving process.

4. Purposes in Teaching Reading. The first and most important reason for teaching reading in the public schools is that the pupil may be able to extract the thought from the printed page. This is the vital, the ever-present purpose in every reading lesson in every grade where that subject is taught. The essential requisite in every study, from the lowest intermediate grade to the end of college life, is the ability to read intelligently. The teacher who realizes this fact will look upon her work in reading as of the greatest importance, the one thing which must not by any combination of circumstances be slighted.

Reading is taught also that a person may be able by oral expression to communicate to others in an intelligible and agreeable manner the thought that he finds in the printed page. In the public schools oral reading and silent reading accompany each other, and no pupil can make great progress in one without some training in the other. However, students of the subject know that silent reading is an intellectual acquirement, while oral reading is the practice of an art, and that the latter can improve only as the former progresses. A person may read silently without giving oral expression to his thoughts, but he cannot read aloud unless he has first read intelligently to himself. A certain qualification might be made here, for it is often true that a person clarifies his own ideas of a passage by reading it aloud.

These words will bear repeating: The chief function of reading in the school is to create a habit of thought-getting, to make every pupil feel that he does not want to abandon a lesson in reading, or his reading of other lessons, until he has mastered the thought that is in them. If a teacher can accomplish this and at the same time put in the way of her pupils the right methods of thought-getting, she has accomplished the greatest thing in intellectual education.

5. Plan of the Chapters. The chapters present the subject in the logical order stated above, that of thought-getting and thought-giving. However, while for the sake of clearness each of these phases of reading is placed by itself, it should be remembered that, in teaching, the principles and methods which apply to silent reading are also essential to oral reading. In other words, the two phases so blend that the first leads by natural and easy steps to the second.

THOUGHT-GETTING

6. Importance. Granting that the chief purpose of teaching reading is to enable pupils to gather thought from the printed page, we at once realize that the importance of the thought-getting phase of the subject is not liable to be over emphasized. There can be no intelligent oral reading without thought-getting, nor, lacking it, can there be intelligent silent reading or study of lessons in arithmetic, geography, history and other branches. Every exercise requiring the pupils to study from books is an exercise in thought-getting, and unless the pupils learn how to do this to the best advantage, they waste time and turn away from their lessons with indistinct ideas. Such being the case, no teacher can reasonably neglect so to conduct her recitations as to afford her pupils every facility for the mastery of thought.

7. Conditions. The difference between the ideal and the real in oral reading as seen in many intermediate and grammar grades is very decided. Sometimes pupils in the seventh and eighth grades read with but little better expression than those in the fourth and fifth. True, they have a larger vocabulary and stumble less frequently over new words, and they can also understand passages that they could not comprehend at an earlier date, but in the adaptability of tone and the niceties of expression there has been little improvement.

These conditions are due to several causes, chief among them being the physical conditions caused by the rapid growth of children, self-consciousness, and poor methods of teaching. The last is more potent than all the others combined.

Faulty methods arise from ignorance or carelessness, or both. Perhaps one great cause of poor methods is that there is no absolute standard for the teacher to follow, and she must rely in a large measure upon her own judgment as to what is best. In no other study is instruction so largely dependent upon the personal plans and whims of the teacher. Under these conditions, the only right thing for the teacher to do is to master the essentials and then find ways to communicate them to her pupils, and put those methods into practice in her classes.

8. Dependence of Oral Upon Silent Reading. While some of the poor results in oral reading are due to defective articulation, poorly trained voices and certain physical conditions, most of which pertain to the mechanics of reading, the most fruitful source of difficulty is failure to comprehend the thought. Many teachers who spend time drilling upon emphasis, inflection, pitch and force fail to secure the desired results because they neglect that phase of the work upon which all of these depend. Interpretation must precede expression.

9. Words. The first essential to obtaining thought from the printed page is a knowledge of the meaning of the words used by the author. If the pupils have received the right kind of instruction, by the time they reach the fourth grade they should recognize at sight, and know the meaning of, nearly all the words in their readers. The new words, however, need special attention. In the older readers these are frequently given at the beginning or the close of each selection, but in readers of recent date this plan has very generally been abandoned, thus throwing upon the teacher the responsibility of selecting the unfamiliar words.

Words whose meaning is not likely to be known, words whose meaning is obscure, words having a peculiar meaning, words difficult to pronounce, and words difficult to spell, should be noted by the teacher in her preparation of the lesson; when the lesson is assigned special attention should be called to these words, and the pupils should be told what they are to do with them in the study of the reading lesson.

10. An Illustration. That there may be no doubt as to what is meant in Section 9, let us apply the suggestions to a reading lesson. Suppose the class is to read Tennyson's *Sir Galahad*; what kind of word study is necessary to their understanding of this stanza?

> My good blade carves the casques of men,
>   My tough lance thrusteth sure,
> My strength is as the strength of ten,
>   Because my heart is pure.
> The shattering trumpet shrilleth high,
>   The hard brands shiver on the steel,
> The splintered spear-shafts crack and fly,
>   The horse and rider reel;
> They reel, they roll in clanging lists,
>   And when the tide of combat stands,
> Perfume and flowers fall in showers,
>   That lightly rain from ladies' hands.

First, let us look for the words whose meaning the pupil will not know. These are *casques*, in the first line; *lance* and *thrusteth* in the second. Our second list will include words used in a peculiar sense and having in the stanza a meaning different from that usually given them. These words are *blade*, in the first line; *shattering* and *shrilleth*, in the fifth; *brands* and *steel*, in the sixth; *tide*, in the tenth, and *rain*, in the twelfth. Since there are no words not included in groups one and two whose pronunciation and spelling are difficult, a third group is not necessary.

Before the pupils can get the thought of this stanza, they must know the meaning of the words in these groups. Here the question may rise, why make two groups? Fortunately, the stanza gives ground for the answer. The words in the first group are words which it is fair to suppose are new to the pupils; furthermore, they are used in their ordinary sense, and if the pupils consult the dictionary for the meaning of these words they will have no difficulty in finding the definitions. On the other hand, the words in the second group present an entirely different problem. The children have learned the ordinary meaning of them, and in studying the lesson will attempt to apply these meanings, unless cautioned to look for different ones. Suppose they apply the ordinary meaning of *brands* and *steel* to those words in line six; in so doing they would obtain an entirely erroneous idea of the line. Apply this suggestion to the other words in this group, and you will at once see the necessity for making the distinction given. In fact, failure to make this distinction in the assignment of the lesson leads to faulty and even to ridiculous interpretation of the subject-matter.

11. Ascertaining the Meaning of Words. While pupils should be instructed to use the dictionary as early as practicable, our illustration shows that the dictionary alone will not suffice for the purpose of enabling them to obtain the meaning of words. This is especially true with children in the intermediate grades. There are several reasons for this. In the first place, children are usually supplied with small dictionaries whose definitions are so brief that they convey no more meaning to the child than the word itself. Second, until the child learns better by a number of humiliating experiences, he will invariably select the first meaning given, whether or not this meaning makes sense when applied to the context; and third, the definition alone, even when the right one is selected, does not always give the desired meaning of the word.

Children, and adults as well, acquire the meaning of words by their use in connection with the other words in the sentence and the paragraph. This meaning is not clear until the child can use the word in the same sense in a sentence of his own construction, and this test should frequently be applied to such words in the reading lesson as are found in the groups in Section 10. Original work along this line should be encouraged, and the pupils should be given such assistance as will lead to success.

Children of third and fourth reader grades cannot recognize nice distinctions in meaning, and it is not wise to carry the study of synonyms very far in these grades, either in connection with the reading or language. What the children should gain in these grades is ability to find the meaning of words by consulting the dictionary, when necessary, but more especially by studying these words in connection with the other words in the sentence and the paragraph. When they have acquired this ability, they have taken one of the most essential steps in getting thought from the printed page.

12. Exercises for Grammar Grades. In connection with their reading and literature study, pupils of the seventh and eighth grades should do some work along the lines suggested in the following exercises. The extent to which any one of these exercises may be carried will depend upon the time that can profitably be devoted to the work, the reference books at the disposal of the pupils and the advancement which the class has made.

(a) DERIVATION. Distribute among the class the following words, and at a subsequent lesson ask the pupils to report upon their derivation and history:

academy
album
angel
cardinal
Carolina
Catholic
class
climax
czar
dandelion
Delaware
diamond
disastrous
distort
dunce
gazette
Georgia
gingham
Gothic
idiot
imp
infantry
insect
journal
leopard
mass
melancholy
Methodist
naughty
New Jersey
New York
pantaloon
pedagogue
Presbyterian
spider
squash
squirrel
taste
thimble
turkey
villain
Virginia

(b) DIFFERENT MEANINGS. Call attention to the varied meanings a single word may have; show the original and the derivative meanings. These few will serve as types: head, hand, tongue, set, court, base.

(c) RELATION OF SOUND AND MEANING. Show that the sounds in words frequently are related to the meaning. The following are examples: Buzzing, barbarian (an intimation of the sound which the Greeks heard in foreign languages), hissing, rugged, serene.

In this connection consider these lines:

> Far along
> From peak to peak, the rattling crags among
> Leaps the live thunder! Not from one lone cloud,
> But every mountain now hath found a tongue,
> And Jura answers, through her misty shroud,
> Back to the joyous Alps, who call to her aloud!

(d) SYNONYMS. As an exercise in discrimination of meaning, study synonyms. It is not easy to find any two words that always have precisely the same significance; in fact. there are no absolute synonyms. Compare the following:

(1) affable, courteous, civil, benign.
(2) awful, terrible, horrible, dreadful.
(3) love, like.
(4) contented, pleased.
(5) invent, discover.
(6) vice, crime.
(7) forgive, pardon.
(8) enough, sufficient.
(9) empty, vacant.
(10) hope, expect.

See *The Dictionary and How To Use It.* In *Teacher's Guide.*

(e) FINE DISCRIMINATIONS. Find passages where words are used with discrimination and effect. The following are excellent types:

(1) He's a jolly little *chap*. *Chap* gives much more familiarity, joyousness and cleverness than *boy*.

(2) He is an *irrepressible youngster*. The sentence conveys a good-natured, half humorous turn to what would have been an expression of irritation if we had written, *He is a boy who cannot be controlled*.

(3) "Bare, ruined *choirs* where late the sweet birds sang."

(4) "Here once the *embattled* farmers stood."

(5) "Our *noisy* years seem moments."

(6) (Leaves)—"Yellow and black and pale and *hectic* red." Note the repetition of *and*.

(7) "The *storied* windows richly *dight*,
Casting a dim, *religious* light."

(8) "Here and there a great *sulky* pike, *hanging* midway down the water in *silent state*."

(f) INTELLIGENT USE. Exercises such as those just given are designed to create an interest in words, but the point which most vitally concerns the teacher is that the pupils shall be interested in words in order that they may learn to use them intelligently. Every time the child's vocabulary is increased, he has made a distinct advance in education. Words are such wonderful, living things that no person can understand the conversation of cultured people or read with perfect appreciation unless he is acquainted with the delicate shades of meaning which common words possess.

13. Grouping. Grouping, or phrasing, is the second step in thought-getting. It consists in thinking together, and, in oral reading, in speaking together those words which constitute an idea. The groups may be complete sentences or they may be combinations of words without either subject or predicate. Grouping logically follows finding the meaning of words, to which it is inseparably related. Grouping is so essential to oral reading that much of what is said in this section will apply to the discussion of that phase of the subject, as well as to thought-getting, but since grouping is the one sure test of thought-getting, we need to discuss it in connection with this phase of the reading.

Pupils who have been well taught have the habit of grouping fairly developed by the time they reach the last half of the third reader or the beginning of the fourth. Those who have not been trained to think their words in groups merely call words when reading orally. When a teacher finds pupils in this condition, she should at once proceed to teach them how to group words.

(a) First Steps. The first exercises should consist of short sentences which should be so simple that the pupils can give their entire attention to the point in hand. Write upon the board such a sentence as:

Mary laid the book on the table.

Ask the pupils to read it. They will naturally divide the words into two groups, *Mary laid the book* forming the first, and *on the table* the second. Lead the pupils to see that each group of words makes a picture, the first being Mary and the book, and the second the table with the book upon it. Follow this sentence with a number of others of about the same length.

Do not, in this first exercise, use any sentences containing more than three groups of words. The purpose of the lesson is to teach what grouping means and to lead the pupils to see what words should be thought of together in their reading.

(b) Other Exercises. However carefully pupils may be taught in the lower grades, they will profit by frequent exercises in grouping in the fourth grade and by occasional exercises in grades that follow. Whenever a pupil is unable to express the thought correctly, he needs to give attention to his grouping of words in the matter he is reading. The following exercises will be suggestive as to what can be done:

(1) Write sentences on the board and ask the pupils to copy them and divide them into groups. There are various

ways of indicating the groups. The words in a group may be connected by hyphens:

I-saw-James in-the-buggy.

The groups may be indicated by separating them by vertical or slant lines; as,

The quaint and homely style | in which the story is written | wins the admiration | of all readers.

Again, the words of a group may be enclosed in brackets; as,

[Blessings on thee] [little man]
[Barefoot boy] [with cheeks of tan].

We at once see that the second plan is the simplest, and, therefore, the easiest to follow. Most teachers will doubtless prefer it to the others, but it does not matter so much which plan is followed as that all pupils use the same plan.

The papers will differ when long sentences are given, for the pupils will differ in their interpretation. Within reasonable limits this difference should be allowed, for it encourages self reliance and independent thinking; but when the grouping is such as to show that the pupil is radically wrong, his interpretation should be corrected.

(2) Have the pupils copy stanzas of poetry or paragraphs from their readers and divide them into groups.

Frequent exercises of the kinds here described will soon establish the grouping habit.

(c) RULES. Practically no fixed rules can be given for grouping. Sometimes punctuation corresponds with the logical groups of words in a sentence; as,

So saying, | the king left the prison.

Sometimes it lends no assistance, as in the sentence:

Henry, James, John and Robert | went to school.

About the only suggestion which is practical in all cases is to remember that there is but one idea and one important word or combination of words in each group.

14. Continuous Thinking. In most short sentences the thought is easily discerned, and when the pupil has learned to group the words expressing the different ideas he grasps the meaning of the sentence at once. In long sentences, however, pupils have more difficulty and they often lose themselves in the large number of words. By the time pupils are ready for the fourth reader, training in continuous thinking should begin. Pupils should be led to see that it is not only necessary to think and speak the words in groups, but that they must also discover the relation which all the groups in a sentence sustain to each other before they can understand the sentence; that is, they must think from one group of words to the next, and so on to the end of the sentence, and then consider these groups as parts of an organic whole. To illustrate:

The silk of the silkworm | is a fine, yellow, transparent gum | which hardens | as it becomes exposed to the air | when issuing from the insect's head.

This sentence naturally divides into five groups, and some may divide it into more. It cannot be understood nor can the thought be expressed orally without considering all the groups in their relation to each other. The thought must move forward to the end without stopping.

In the following stanza the thought must be sustained through the eight lines:

And up and down in the darkness,
    And over the frozen sand,
I hear the men of the coast guard
    Pacing along the strand,—
Beaten by storm and tempest
    And drenched by the pelting rain,—
From the shores of Carolina
    To the wind-swept bays of Maine.

Pupils will derive much benefit from occasional exercises designed to train them in continuous thinking. Begin by writing upon the board sentences whose meaning falls easily within the pupils' grasp, and lead them to see how they sustain their thought from group to group of words until they arrive at the end of the sentence. Increase the length and difficulty of the sentences as the pupils advance in their reading. Inverted sentences need special attention, and it is a good plan to make a collection of such sentences as those given below and keep them for illustration:

> Great indeed is the power of evil.
> Great indeed is the gift of the gods.
> Announced by all the trumpets of the sky, arrives the snow.
>
> "Somewhat back from the village street,
> Stands the old-fashioned country seat;
> Across its antique portico
> Tall poplar trees their shadows throw."

(a) THE CENTRAL IDEA. Every complex sentence contains one idea that is more important than the others, and until the pupil discovers this idea he cannot interpret the sentence correctly. Children are prone to think that the ideas in a sentence rank in importance in the order in which they occur, the first idea stated being most important, the second next in importance, and so on. So long as they hold to this opinion their interpretation will be wrong and they will read without expression; therefore, finding the central idea is an essential part of the work in continuous thinking. The inverted sentence brings this to the attention of the class with more than ordinary emphasis. Let us consider for a moment the lines from *The Old Clock on the Stairs*, quoted above. We notice at once that the lines contain two complex sentences of equal rank. Each is an inverted sentence, and interpretation necessitates finding the central ideas. What is the central idea in the first sentence? We at once see that it is the location of the old-fashioned country seat. Placed in ordinary conversational form, this idea would be expressed by saying, *The old-fashioned country* *seat stands;* but when we arrive at this point we see that our thought is not complete, and that the idea of secondary importance, *somewhat back from the village street*, must be added. When put in the form of a simple narrative, therefore, and transposed so as to place the central idea first, these lines would read, *The old-fashioned country seat stands somewhat back from the village street.* Following the same plan with the next two lines, we have, *Tall poplar trees throw their shadows across its antique portico.*

You should find numerous other illustrations for drill exercises which will show how easily the central thought can be selected, and also the importance of discovering it before attempting to read the sentences.

Some sentences contain several ideas of equal importance, all related to the central idea, as in the following illustration:

"Then again the light seemed to fade before his eyes and he looked up and, behold! a mist of the color of blood had come over the sun, and the bank of the black cloud had risen very high and its edges were tossing and tumbling like the waves of an angry sea; and they cast long shadows which flickered over Swartz's path."[1]

Every reader above the third contains sentences which can be used for special drills of this kind, and much material can be obtained from other sources. Besides these regular drills, the pupils should be held responsible for finding the central idea in each sentence and each paragraph or stanza, as the case may be, in the study of their reading lessons.

(b) SUBORDINATE IDEAS. Selecting the central idea leads to the selection of the subordinate ideas, and the pupils will soon discover that some of these are more important than others, but that all are necessary to complete the meaning of the writer. Assigning their right value to these subordinate ideas is essential to correct expressions in oral reading, and because of its special connection with this phase of the subject it will be more fully discussed further on.

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[1] Ruskin: *King of the Golden River.*

15. Figures of Speech. Whenever words are so combined as to express a meaning different from that which they ordinarily signify, the expression is a figure of speech. Much of the elegance, beauty and force of both words and phrases has been given by a figurative use of them. *Head*, in its literal sense, means the top section of the human body; in the phrase, "the intelligent *head* of the household," the word *head* is used figuratively and means *the chief one*. Figures of speech, however, attract more attention in phrases, where, in order that they may be appreciated, there must be an understanding both of the literal meaning of the figure and the derived meaning. Consider these lines from Whittier:

> The sun, a snow-blown traveler, sank
> From sight beneath the smothering bank.

A person whose life has been spent in the tropics could not appreciate the quotation without much explanation; one who has passed many a winter in our northern states might pass over the figure without seeing its forcefulness, but a word or two of explanation would make it vivid to him. Imagine a traveler who has walked long in the driving snow. His coat, hat, and beard are so full of the fine white particles that it is impossible to recognize him, for even the outlines of his face are obscured. Thus the circle of the setting sun is so dim and vague that it appears a fiery blur on the horizon. Had the traveler fallen, the snow would have soon drifted over him and left him breathless, dead. Thus the sun dies, smothered behind the snow banks in the west. Such an explanation lays clear the basis of the figure and brings out its aptness and force. Teachers must bring up in the minds of their pupils clear ideas of figures. This can be done usually by keen and logical questioning, which makes them feel that they have seen for themselves.

16. Simile. The simplest and most easily recognized figure of speech is the simile, where the comparison or likeness is expressed by a word. Thus, Lowell, in *The Vision of Sir Launfal*, writing of what may be seen in an open fireplace, says:

And swift little troops of silent sparks,
  Now pausing, now scattering away as in fear,
Go threading the soot-forest's tangled darks
  Like herds of startled deer.

Here in the last line he sees a comparison between the troops of sparks and herds of deer and expressly states it, introducing his figure by the word *like.* It is this word *like* and the word *as* that give us the clue to a simile. Other good similes may be found in the following quotations:

And they fell on Sir Launfal as the snows on the brine.

The voice of the seneschal flared like a torch.

Bent like a laboring oar, that toils in the surf of the ocean.

Shocks of yellow hair, like the silken floss of the maize.

And through the glass the clothes-line posts
Looked in like tall and sheeted ghosts.

17. Metaphor. The simile and metaphor have much in common. In fact, they are the same, except that in metaphorical language the comparison is not expressed, but is assumed. The quotation from Lowell in the preceding section contains metaphors as well as a simile. We have an intimation of one in the word *troops*, but the phrase *the soot-forest's tangled darks* is a fine metaphor. Note that he does not say the masses of soot look *like* the tangled depths of a forest, but he assumed them to *be* a soot-forest with tangled darks. To express the sadness and disappointment of Sir Launfal, Lowell writes, "The heart within him was ashes and dust." He does not say his heart was *like* ashes and dust, but it *was* ashes and dust; hence, the figure is a metaphor. Here follow several other metaphors:

The Lord is my shepherd.

The military eye I meet, now darkly sparkling under clerical, now under rustic brows. 'Tis the city of Lacedaemon; 'tis a stack of bayonets.

Silence, now, is golden.

And, forgotten, the flowerets dropped from her fingers,
And from her eyes and cheeks the light and bloom of the morning.

Hot and red on his lips still burned the flush of the fever.

18. Metonymy and Synecdoche. In metonymy the name of something associated with a thing is used for the thing itself. "Few were his words of rebuke, but deep in the hearts of his people sank they." The words did not *sink* into the *hearts*. They were heard and remembered. We have associated heart with soul and mind so long that to speak of one calls up the other. To *take a thing to heart* is to feel grieved over it. Our everyday speech is full of metonymy that has become so familiar we scarcely notice it. Thus, *red tape*, for *official formalities*, a *good table*, for *good food*; the *pulpit*, for the *preachers*; the *stage*, for *actors*; the *court*, for the *judge*.

When a part of anything is used to signify the whole of it, or the whole of it the part, the figure is called synecdoche. Thus, "Met he that meek, pale face, returning home from its watchings." In the sentence just quoted, the *face* is mentioned, but we understand that he met Evangeline and was particularly impressed by her meek, pale face. Synecdoche, which appears to be a variety of metonymy, is as common as the latter figure. Thus, twenty *hands* (men); twenty *head* (cattle); a *sail* (ship) in the offing.

19. Apostrophe and Personification. When an absent or imaginary person is addressed in the second person, the figure is called an apostrophe. Thus, Antony, speaking over the dead body of Cæsar, says, "O, mighty Cæsar! dost thou lie so low?" In *Snow-Bound*, Whittier says:

Clasp, Angel of the backward look
  And folded wings of ashen gray
  And voice of echoes far away,
The brazen covers of thy book.

In another place in the same poem, he writes:

O Time and Change! with hair as gray
As was my sire's that winter day,
How strange it seems with so much gone
Of life and love, to still live on

In the last quotation another figure is joined with the apostrophe in the first four words. *Time* and *Change*, two abstract and inanimate things, are spoken of as though they were alive. This constitutes personification. Examples of both the figures are easily found:

> Build thee more stately mansions, O my soul.

> Here the wigwam blaze beamed on the tender and the helpless, the council-fire glared on the wise and daring.

> Within the twilight chamber spreads a pall,
> The shadow of white Death.

> How wonderful is Death,
> Death and his brother, Sleep.

> And thrice the Saxon blade drank blood.

20. Teaching Figures of Speech. Figures are most easily taught by the study of types like those given in the previous sections. Time devoted to this work is far from wasted, since a knowledge of the various figures enables the pupils to understand better what they read and to find greater interest in reading lessons. Again, the study gives the imagination a range afforded by no other line of school work. At first the teaching should be indirect, the teacher incidentally calling the attention of the class to the figures found in the reading lesson. Ask the pupils to explain the types. Suppose, for instance, the class is reading Whittier's *Skipper Ireson's Ride*. What picture do the following lines present to them?

> Sea-worn grandsires, cripple-bound,
> Hulks of old sailors run aground.

To what does *hulks* refer? Why are the grandsires called *cripple-bound*? Stated in plain prose, what meaning does the poet intend to convey? What does he gain by comparing the old sailors to hulks run aground?

We see at once that pupils who know nothing about ships or sailors cannot understand the figure, but as soon as they see that the old sailors who are themselves retired from service are classed with the hulks of ships no longer seaworthy, the lines convey a much more vivid picture than could be brought to mind by an ordinary description.

Pupils should be encouraged to look for these types in their reading, and in the grammar grades they may with profit spend some time in classifying them under the figures of speech. Let the teacher remember that the figures of speech are taught merely as an aid to the understanding and appreciation of literature, and many difficulties which seem to hedge about the subject will disappear. Classification of figures is not an end—it is merely a means for a better understanding. Hence, it is not of vital importance that the pupil should be able to name metonymy, synecdoche and simile as he finds them; but it is vitally important that he should appreciate the differences among them and also the vivifying force the figures give to literature. If the figures themselves are studied properly and the teacher mentions them casually by name every time they are seen, the pupils will soon fall into the habit of doing the same thing.

In addition to the plan given above, the following may be helpful:

(a) MATERIAL. (1) Collections of good figures of speech suitable to the age and intelligence of the class. These are better if they deal with familiar subjects and are taken from the school readers or from books which the pupils know.

(2) Figures of speech found by the pupils in their readers, in the masterpieces accessible to them, in newspapers and magazines and in daily conversation.

(b) METHOD. (1) Begin by calling attention to examples of the simile as they are found from time to time in the reading class and in conversation.

(2) Give fine similes within the range of the pupils' appreciation, which you have selected from literature.

(3) Set the pupils to finding similes in the sources mentioned above.

(4) In the same manner, after an interval, introduce pupils to the other figures of speech which we have mentioned, one at a time. You will find that this introduction comes along incidentally, for the pupils will bring in as examples of simile some of the other figures of speech. In your criticism you will naturally allude to those which are not directly studied. There need be no haste in the matter; it need take but a few moments from the regular recitation and only when nothing else seems more imperative, if the practice is continued from week to week and year to year.

(5) When the pupils have learned to recognize the difference in figures of speech from examples you have given and to find such examples of figurative language themselves, set about more careful analysis of the figures. In that analysis consider the following points:

(a) Determine the basis of the figure, that is, what are the things actually compared, or wherein does the association lie, or what is the real thing that is personified, or who and where is the person apostrophized?

(b) Show exactly how there is a resemblance or an association, etc.

(c) Compare the effect of the literal with that of the figurative language.

(d) Allow the pupils to experiment on changing figures from one form to another. They will find it very easy to change metaphors to similes or similes to metaphors.

(6) After the analytical study is finished, be careful to return the figure to its place in the text, if possible, in order that it may be read and enjoyed in the place where the writer intended it should be. While this may not be possible with some of your selected figures, yet you can always do it with those which are taken from the reader.

21. Allusions. Allusions are casual references to things which the author assumes that the reader knows. If the latter is unacquainted with the thing alluded to, he loses the meaning. Allusions are frequently made to historical persons and events, to mythological creations, to the Bible and to the statements of other well-known books. The greater our store of information concerning the great sources of allusions, the greater will be our enjoyment of literature. There is no way of detecting allusions unless the reader has some inkling of the fact that one is to be found and is given some hint as to where to find it. After that the source must be found. Every day in our reading we ourselves pass ignorantly over many of them and we may be sure that our pupils miss many more. It is in the detection of allusions and the study of their force that we may give our pupils most assistance. When Emerson says, "If we cannot at once rise to the sanctities of obedience and faith, let us at least resist temptations; let us enter into the state of war and wake Thor and Woden," we quickly notice the allusion to the Scandinavian gods and can easily determine what they signify. Thereafter the force of the figure is easily seen. But when Stevenson says, "But he held an inquest and passed sentence: *mene, mene;* and condemned himself to smiling silence," we see little of the meaning and lose all the force unless there comes to mind that wonderful picture of the Persian monarch given us in the fifth chapter of the Book of Daniel, especially from the twenty-fourth to the thirty-first verse.

22. Relation of Reading to Other Subjects. We have shown that reading lies at the foundation of the study of all other books. The child must learn to read before he can read to learn. Theoretically, he should have completed the first stage of the process by the time he is ready to enter the fourth grade. However, this ideal condition is seldom met. Silent reading, or the study of books, occupies the greater part of the pupil's time spent in school, and the same attention should be given to thought-getting in the study of other lessons as in the study of the reading lesson. Most of the mistakes in arithmetic, history, geography and other branches can be traced to the pupils' inability to read and interpret the text-matter. The teacher who would secure the best results in reading must see that the method of study used in the reading lesson is applied to other branches, and an occasional exercise in reading aloud from the arithmetic, the language book, the geography and history will be productive of excellent results.

23. Silent Reading. Most of our reading is done out of class and out of school, and pupils should be trained to become rapid and skilful silent readers. A good degree of skill should be gained before the pupils reach the sixth grade; consequently, the practice should begin early. Heretofore all the stress placed upon reading has been given to oral reading. "The school has in the past been so absorbed in devolving the power in pronouncing words or in helping children to read orally, that it has forgotten the great end of reading proper." Fortunately, teachers are beginning to realize that the work in reading should not be confined to the oral lessons.

(a) Classification. All reading matter may be roughly divided into two classes: that which is read for information, and that which is read for pleasure. Matter of the first class must be read carefully, sometimes even to the close scrutiny of words. Most of this kind of reading is known as study. Matter of the second class is read lightly and rapidly, and the care necessary when reading for information can here be largely dispensed with.

(b) Methods of Procedure. A young person who has completed the work of the elementary school should be able to scan the page rapidly and glean the thought. He should have gained the power to look through the printed word to its meaning, as one looks through a window upon the objects beyond. Moreover, he should be able to grasp the thought without mentally pronouncing the words or giving any thought to their vocal elements. People who are untrained in silent reading often move the lips, or they may be one stage removed from this condition and mentally vocalize the words. Such people read slowly and with decided limitations of power. The question before the teacher is, How can I enable my pupils to gain such power in silent reading as they ought to have? The following suggestions will be helpful in answering this question:

(1) Begin early. The pupils should begin this work in the first grade, but you must take them as you find them. If they have had no training before they reach the fourth grade, it will be necessary to give considerable time to this line of work.

(2) Make the exercises short and simple, at first. Ask the pupils to read a sentence or short paragraph, then tell you what it contains. If the pupil omits any particular of importance, or in any way changes the meaning, he has failed. Unless the pupils have had previous training, they should for the first two or three months have a daily exercise of this kind. Let the exercises increase in difficulty as fast as the pupils gain in power.

(3) Assign selections from the reader, from stories, from other books and articles from periodicals, to be read and reported upon. These exercises can be conducted according to two plans: First, assign the work to be done at the seats, and as soon as a pupil has finished his reading let him close the book. Number the pupils in the order in which they finish. When all books are closed, let the pupils tell what they have gleaned from the reading. There will be some astonishing revelations from an exercise of this kind, and you will discover that the time devoted to the reading is not a criterion by which to judge the pupils' ability to get the thought. Some who read the most rapidly will gain a much more complete idea of what is read than some who spend the most time upon it. You will find some in each of these classes who glean the entire thought, and others who gain practically nothing. Those who have the greatest difficulty need the most practice. The limitations of time placed upon the recitation may make it impossible to have all pupils tell what they read at each exercise, yet this very limitation causes them to work vigorously while reading. However, premium should be placed upon the accuracy of reproduction rather than the length of time required to do the reading.

By the second plan pupils are given matter to read out of school, such as a book or an article in a magazine, and are required to make their report in class. This report may be oral or written, as seems best. Under this plan the pupil takes his own time for reading the work assigned, but he is not expected to read it more than once before reporting. The work assigned should fall easily within the capacity of the pupil and should be of an interesting character.

(4) More extended work may be assigned to the advanced grades, particularly the seventh and eighth, and they will be greatly benefited by writing synopses of what they read. This teaches them how to analyze thought and to distinguish what is of value from what is unimportant. A partial synopsis of the *Legend of Sleepy Hollow* is here given, to show how this plan may be used:

I. Location of Sleepy Hollow.
    1. The Tappan Zee.
    2. Tarrytown.
    3. The valley.

II. Name.
    1. The writer's experience.
    2. Reasons for the name.

III. Legends and Superstitions.
    1. Local tales.
    2. The headless horseman.
    3. Effect upon the people.

IV. Adventures of Ichabod Crane.

V. Conclusion.

The fourth division constitutes the greater part of the story and will have several subheads, and some may prefer to consider the conclusion a part of this division. Begin these exercises with short selections and increase their length as the pupils acquire ability to analyze their reading.

If every teacher could appreciate the power which ability to read rapidly and accurately confers upon one, much more attention would be given to training pupils in silent reading. Were pupils properly trained in this work in the intermediate grades, it is safe to say that in the grammar grades they could, without any greater expenditure of energy, accomplish from one-third to one-half more than they now do.

24. Home Reading. Young people will never become proficient readers by what they do in school alone. The school reading must be supplemented by reading at home. Owing to the multiplicity of juvenile books, there are now but few schools whose pupils cannot be supplied with an abundance of reading material. The teacher's part in this phase of the work is to call attention to and awaken interest in suitable books, and to coöperate with the parents in guiding the children in their reading. In most instances the danger is that the children will read too much and acquire the habit of reading superficially. One or more juvenile periodicals, such as the *Youth's Companion*, *Saint Nicholas* and the *World's Chronicle*, should be in every home where there are children old enough to read them, and it is also a good plan for the school to have copies of these and other periodicals which the children can read with profit.

The public library is at once a help and a menace. In many instances where children are allowed to draw books at will, they choose fiction of an inferior grade and read so much that it has an unfavorable influence upon their views of life. "The indiscriminate use of the public library is probably an exceedingly dangerous thing." It is within the province of the teacher and parents to prevent such use of the library by directing the early reading of the children along the lines of good literature. If before they reach the age of fourteen or sixteen, young people acquire a love for good literature, they will find no satisfaction in the cheap and trashy works which constitute the great bulk of modern fiction.

25. Book Tasting. Occasionally it is well for the pupils to read for the mere pleasure of reading and to content themselves with getting what they can from the exercise of the power they have gained in this respect. It is a great advantage to a person to be able to read rapidly with the eye, picking out here and there the main thoughts and leaving the secondary ones to take care of themselves. To train the pupil to "skip" sensibly is well worth while. Nobody will read everything that is presented to him, and some form a habit of beginning a book and reading lightly until seriously attracted by its contents or becoming discouraged and giving up in despair. Others have acquired the skill to take up a book and run hastily through it in order to determine whether it is worth reading or not. Children usually settle this matter themselves by the appearance of the page. If the type is good and there appears to be an abundance of conversation, especially if a few good phrases attract the eye, children consider the book worth reading, or at least worth a trial. They may be taught however, to exercise more judgment in this respect by occasional exercises like the following:

Distribute to each member of your class a book from the library. Direct his examination after the following outline:

(1) Examine the outside of the book. In doing so, note contents, size and weight, the cover, title, decorative designs.

(2) Open the book and read the title page, noting the name of the author and any information that is given concerning him. The name of the publisher is always interesting.

(3) Note the divisions of the book. In doing so, as the leaves run rapidly under your thumb you will note the kind of paper, print, nature of the illustrations, as well as the divisions of the book.

(4) Read the preface or glance through it hastily. Oftentimes the preface becomes more interesting after the book is read.

(5) Look over the table of contents.

(6) Look at the list of illustrations.

(7) Look for the index.

(8) Open the book here and there and read for a minute or two to see if the style promises to be attractive.

(9) Call for reports from the children on the books they have examined.

TEST QUESTIONS

1. (a) Give briefly the derivation and history of the following words: Delaware, mass, naughty, thimble, dunce. (b) Bring out the shades of meaning in the following words: enough, sufficient; awful, terrible, horrible, dreadful.

2. (a) What is there forceful or apt in the italicized words in the following phrases: (1) The leaves were "yellow and black and *hectic* red;" (2) "The *storied* windows richly *dight*"? (b) Find in literature phrases, not quoted in this lesson, that you consider (1) skilful; (2) apt; (3) great (powerful).

3. Show how the following stanzas should be grouped for oral reading:

Get but the truth once uttered, and 'tis like
A star new-born, that drops into its place,
And which, once circling in its placid round,
Not all the tumult of the earth can shake.

Weak-winged is song,
Nor aims at that clear-ethered height
Whither the brave deed climbs for light;
We seem to do them wrong,
Bringing our robin's leaf to deck their hearse
Who in warm life-blood wrote their nobler verse.

4. What is the central idea in each of the above stanzas? Show how each central idea is modified by subordinate ideas.

5. How would you proceed to secure an interest in home reading of the right sort, provided you had fifth or sixth grade pupils who were acquiring a taste for worthless or vicious books? Be specific.

6. Describe briefly one of your favorite books, touching every point in the outline in Section 19 of this lesson.

7. Interpret fully the following stanza from Lowell's *The Present Crisis:*

Once to every man and nation comes the moment to decide,
In the strife of Truth with Falsehood, for the good or evil side;
Some great cause, God's new Messiah, offering each the bloom or blight,
Parts the goats upon the left hand, and the sheep upon the right,
And the choice goes by forever 'twixt the darkness and the light.

8. Express the following ideas in figurative language: (a) She has yellow hair. (b) His complexion is very dark. (c) The squirrel is a lively animal. (d) The violet is a pretty little flower that blossoms close to the ground. (e) The train makes a great rumbling noise when it crosses the bridge.

9. Quote a passage of at least five lines that seems to you to have strong emotional power.

10. Show by specific illustration how you would correlate reading with (a) elementary science, (b) geography, (c) history.

CHAPTER TWO

READING

ORAL READING

1. The Mechanics of Reading. By the mechanics of reading we mean those elements of expression which must be considered in teaching oral reading. Chief among them are articulation, pronunciation, emphasis, the emotional element, time, pitch or melody, and force. The teacher should possess a knowledge of the underlying principles and laws by which each of these elements of expression is governed, because this knowledge gives her the standard of criticism to which she must resort when criticizing the reading of her pupils. There can be no valid criticism without some well-defined standard with which to compare the work criticized. But however valuable this technical knowledge may be to the teacher, it is not necessary to the pupils, and in her criticisms of oral reading the teacher should be careful not to mention the technical terms, nor cite the principles or rules which she may have learned in connection with the study of reading. Pupils who try to read by rule become affected and lose sight of the relation between thought and expression. The teacher should gain, through her study of the elements of expression, a method of teaching reading that will enable her to assist the pupils to overcome their difficulties, to secure expression, and also to aid them in gaining a clear insight into the subject-matter read.

2. Essentials. A good reader shows distinct articulation, makes no mistakes in pronunciation, places emphasis where it belongs and speaks with sympathetic, natural and effective expression. Any teacher who falls short of this standard can reach it by studying the underlying principles of expression and by giving herself a good amount of practice in reading aloud, provided her selections for such reading include such variety as will enable her to practice all the principles studied. It is certainly the duty of the teacher to become a good reader herself and thus be able to stimulate her pupils to reach a high standard of excellence. Anyone who is willing to study and practice frequently will naturally establish a standard so clear and high that it cannot be said of her pupils that they have made no progress in their reading.

Oral reading should be clearly distinguished from declaiming or acting. In ordinary reading the reader is actually expressing the thought of the writer as he gleans it from the page, and this does not call for imitation or loud declamation. The more closely the teacher adheres to this idea, the more satisfactory will be her results in reading.

3. Articulation. When a person utters the sounds of a language, he articulates. Clear and distinct articulation is the basis of speech, the foundation of pronunciation. Before anyone can teach reading well, he must be able to give correctly the sounds in the language. Sometimes teachers are given to faulty articulation and yet are entirely unconscious of the fact. There is no excuse for ignorant continuance of this fault after a person's attention has been called to it. If any teacher does not know the sounds and cannot make them separately, she should at once go to the guide to pronunciation near the beginning of the dictionary and learn them. The consonant sounds may be identified through words which they begin. The suggestions given below will aid the teacher to learn.

There are three distinct steps in the process of learning the sounds:

(1) The separation of the spoken word into its component sounds; as, *m–an*, *man*.

(2) The separation of the written word into parts corresponding to the component sounds; as, *m–oth–er*, *mother*.

(3) The association of symbols and sounds; as in *late*, *time*, *let*.

At an early date test your pupils to see if all can take successfully the three steps just indicated. If there are any who cannot, give the exercises necessary to remedy the defects.

4. Causes of Defective Articulation. Every class will exhibit certain imperfections in speech. These faults are usually due to one or more of the following causes:

(a) PHYSICAL DEFECTS. (1) Defective organs of speech. You can do little more than advise the parents to consult a physician in many cases of this kind.

(2) Defective hearing. Be sure that the imperfect utterance of a pupil does not come from the fact that he cannot hear. (Volume III, page 193.)

(3) Defective nervous control. (Volume III, page 195.)

(b) IMITATION. During the period spent in the primary grades, children are active imitators, and however excellent their instruction may have been, they will still imitate the speech they hear at home and on the playground.

(c) FOREIGN LANGUAGE. Foreign born children and children of foreign parentage born in this country frequently come from homes where the language of the fatherland is spoken, and in many cases these children have to learn a number of sounds not found in their native language and which they do not know how to produce. The difficulty is a physical one, and when the children are shown how to place the vocal organs so as to produce each new sound and give a little daily practice to it, they soon become proficient in their articulation. That the teacher may provide the drills needed by such children, she should know the sounds not common to the English and the language which the children speak. To illustrate: Scandinavian children have trouble with *j*, *th*, *d*-final and *w*, because these sounds do not occur in their language. They need drill on such words as *July*, *joy*, *job*, and *sand*, *dismal*, *dense*, *this*, *thee*, *them*, *with*, *which*, *while*. Bohemian children will need drills on a different set of sounds and French children will need to have special attention given to their vowel sounds.

(d) YOUTHFULNESS. Lack of precision and clearness of speech are common to small children, and they have not gained full control of their vocal organs when they reach the fourth grade. Time and patience will overcome this difficulty, but the children will be very materially aided in their efforts if their reading lessons and exercises in language contain only sentences of simple construction.

5. Systematic Exercises. It is important that schools should give training in articulation, for it has both a commercial and a cultural value—a commercial value, in that an employer is not as liable to engage a young man or young woman who speaks indistinctly and in a slovenly manner as one whose utterance is clear and intelligible; a cultural value, because our speech betrays us. Says an eminent authority, "There is no more certain evidence of culture than an elegant and distinct enunciation." Training in articulation naturally belongs with the work in reading, and systematic exercises which will lead step by step to the overcoming of all defects should be provided.

6. Method. Select sounds with which the pupils have the most trouble. These will include (1) the consonant sounds; (2) the sounds of *th*, *wh* and *sh* in their various combinations; (3) consonant sounds which are particularly troublesome to some children, as *v*, *w*, *k* and *g*.

(a) CONSONANTS. (1) Select lists of words which will give drills upon the consonant sounds, the words in each list begin devoted to one consonant. Write these lists one at a time on the board, or, what is better, place each list upon a strip of paper, writing the words with a rubber pen and black ink, or black crayon. Place the list before the class and give one or two minutes of rapid drill each day, requiring both individual and concert work. Insist upon perfect enunciation. The following lists are suggestive of what can be used:

B	C	D
bat	cat	desk
bed	candle	din
beck	coffee	drawer
bound	canticle	drink
bent	comrade	dream
but	comfort	dumb
bone	council	date
boiler	canary	dirk
bank	candy	deck

Make similar lists for each of the consonants. Use in each list the words which the children have the greatest difficulty in pronouncing. Give particular attention to enunciation. The formation of correct habits of speech, not the learning of the words, is the object of the exercise.

(2) Construct sentences which will give alliteration and at the same time provide for such vocal gymnastics as will secure the drill desired. These sentences may be meaningless as to content, provided they secure to the pupils the necessary practice. A few are here given to illustrate what may be attempted:

Ben Brown bent Bob Bang's big bow.
Baxter Brothers began boiling batter before breakfast.
Carrie Canute can cut cotton cloth.
Captain Cummings captured Colonel Carr of Comity Creek.
David Dixon drove Drummond over Donaldson's dune.

The ingenious teacher will be able to construct many sentences of this kind, and she can call upon the pupils for others. They will enjoy the sport and from the exercises derive such practice as will enable them to overcome all difficulties in the articulation of consonant sounds.

(b) Th, Wh and Sh. These sounds are difficult for children of foreign parentage, because they do not know how to make them.

(1) The sounds of *th* are formed by placing the tongue inside the points of the upper teeth. Explain this to the pupils and show them how to do it; then give such drills as *tha-tha, tha-tha, the-the*, etc.; the first *th* in each couplet is to be given the soft sound; the second, the hard. You will need to explain the position of the vocal organs and repeat the drill often, but by continuous practice the pupils will in time form the habit of so using the vocal organs as to give these sounds correctly. Lists of words such as—

the
this
then
these
that
those
thimble
thunder
think
through
thou
thorough

will afford excellent practice. Construct sentences similar to the following:

Theophilus Thistle thanks Theodora Thackery.
Be thoughtful, thrifty and thankful through life.

(2) Treat each of the other sounds in this sub-section in the same manner. In all cases the steps should be, first, illustration by the teacher of the position of the vocal organs; second, imitation by the pupil; third, drill.

(c) SPECIAL CASES. (1) Some pupils say *wery* for *very*. Show them how to put their upper teeth against the lower lips and say, *va-fa*, *va-fa*, *ve-fe*, etc. Follow this with drills similar to those suggested in the other exercises.

(2) Some pupils give the sound of *d* and *t* for *k* and *g*. Teach these pupils to turn the tip of the tongue down towards the floor of the mouth and say, *ga-ka; ga-ka; ge-ke*. Follow this with the usual drills.

(3) Words ending in *ing*, *ed* and *r* should receive attention until the pupils have become habituated to the correct articulation of these words. Faults of this kind are largely due to haste and carelessness. Whenever the articulation is faulty, ask the pupil to think what he is to say and try again.

7. Pronunciation. When a pupil can articulate all the sounds in his language, there is no reason why his pronunciation should not be correct. There are few rules that offer help to any extent. The best way to learn pronunciation is by consulting the dictionary and listening to good speakers.

There are common faults in pronunciation that should be watched for and corrected persistently on all suitable occasions. Among them are the following:

(a) THE OMISSION OR INCORRECT ARTICULATION OF SOUNDS IN UNACCENTED SYLLABLES. Use for drill the words in which you detect this fault, and others of similar structure. In the following words the sounds frequently omitted or given incorrectly are indicated by italic letters:

gover*n*ment
inc*or*rect
g*e*ography
certif*i*cate
reg*u*lar
gen*e*rous
*a*rithmetic
comp*o*sition
liter*a*ry
nec*es*sary
*at*tention
hyp*o*crite

(b) The Suppression of Sub-Vocals and Aspirates Near the Ends of Words or of Accented Syllables. The following sentences show common examples of this fault: Gi*ve* me fi*ve* cents. Chris*t*mas is a happy day in this lan*d* o*f* plenty. Le*t*'s go ou*t* to play.

(c) The Blending of the Last Sounds of One Word with the First of the Next. You can use the following tricky sentences for occasional practice: "'Ice cream!' I scream, 'Ice cream!'" "Could you, would you, should you act in this way?" "Let us all unite in song."

(d) Slighting Difficult Combinations of Sounds. If you hurry them a little you can make many sentences that will trouble the best of readers. An occasional brief exercise on such sentences as the following will wake up a class and give them a little amusement: (1) She sells sea shells. Does she sell sea shells? Sea shells she sells. (2) Amidst the mists and coldest frosts he thrusts his fists against the posts and still insists he sees the ghosts. Despite his thrusts and angry boasts the sheeted ghosts are icy posts. (3) Round the rough and rugged rocks the ragged rascal ran. (4) Christopher Crisscross is full of crochets and crazy crisscrosses. (5) The deeds thou didst those deeds didst thou do. (6) Learnest thou thy lessons at thy leisure that they may be thine when thou needest them?

The exercises suggested in this section are mere vocal gymnastics and should be executed with the speed and accuracy that characterize good calisthenics.

8. Obstacles to Pronunciation. The pupils often fail to pronounce words at all or to pronounce them correctly, because, first, they cannot correctly divide the word into syllables, and, second, because they do not know some of the phonic elements which the word contains. In all fourth grade classes these matters need attention, and frequently pupils in the fifth and sixth grades need the same kind of assistance.

(a) SYLLABICATION. The reason that a child cannot pronounce such a word as *incomprehensibility* is because he cannot divide it into syllables. Children who labor under this difficulty should be given exercises in syllabication. Begin with words which are easy to divide, as *mindful*, *ability*, *meaning*. Have the pupils read these words and separate the syllables by hyphens. Go over the list and see what new words can be made by adding one or more syllables. In the list cited, we have *mindfulness*, *inability*, *meaningless*. A study of the structure of these words will show that each syllable contains a vowel, with the exception of the last syllable in *ability* and *inability*, each of which ends in *y*. Ask the pupils to look through the reading lesson and write all the words they cannot pronounce, then have them rewrite the words, dividing them into syllables according to the plan here given. A few exercises will show the pupils what to do with new words and place them in position to help themselves.

(b) PHONICS. Every fourth grade is likely to contain pupils who have had little or no drill in phonics, and the teacher will often find it necessary to resort to work which should have been done in the lower grades. It is a good plan to have a set of phonic charts which can be used for drill purposes. The teacher can make these with little or no expense, using the same material as suggested for making word charts. The work in phonics will vary so widely with different classes that no set exercises are given. The selection of sounds and words for drill should in each case depend upon the needs of the class. The following suggestions, however, will apply to all classes: (1) Do not give drills upon sounds which pupils already know. (2) In separating a word into its phonic elements, use the ability which the pupils have; for instance, such words as *motherless*, when written *m-oth-er-less*; *frightful*, when written *f-ri-ght-ful*; *thunder*, when written *th-un-der*, and many others which these will suggest, are readily pronounced by fourth and fifth grade pupils; to make a more minute analysis is a waste of time, besides causing the pupils to think that you underrate their ability. This plan of treatment varies but little from syllabication, but when the spelling does not give the sound of the syllables it enables the pupils to learn the pronunciation more readily. The teacher should not hesitate to give such exercises in phonics as the class may need, no matter in what grade it may be.

9. Emphasis. As usually defined, emphasis is the stress of voice placed upon one or more words in a sentence to attract attention to the central idea. However, in its broadest sense, "emphasis includes any manner of making a thought prominent." As we have shown in Chapter One, Section 13 (a) and (b), in a long sentence there may be several ideas that vary in importance, so that we may notice a strong primary emphasis and one or more of secondary force. It is difficult to show shades of emphasis in print, but something may be done in that way. Let us examine the following lines from Shakespeare's "Julius Caesar:"

Brutus. He hath the *falling sickness.*
Cassius. No, CAESAR hath it not; but *you* and *I*
And honest *Casca*, WE have the FALLING SICKNESS.

Here Brutus calls attention to the fact that Caesar was an epileptic; he had the "falling sickness." Cassius seizes the idea and turns it to his own ends by intimating that the conspirators have a "falling sickness" in submitting to Caesar's claims. The words "falling sickness" must be emphasized to call attention to the double meaning given the words. Again, "Caesar" and "you," "I" and "Casca" must be emphasized to show that all are to be considered in this sentence. Then the three are joined in the word "we" and given a stronger emphasis to bring out fully the antithesis or contrast with "Caesar."

10. Determination of Emphasis. Emphasis depends primarily upon thought. A reader naturally gives to any selection the emphasis which brings out the meaning he gets from the passage. Therefore, emphasis is the great test of a pupil's comprehension of what he reads. This subject is inseparably connected with grouping, upon which it depends, and all that has been said upon grouping applies to emphasis (Chapter One, Sections 3 and 4). The use of the term *emphasis* in a reading class is of very doubtful propriety. It is much better to lead the pupil to a comprehension of the thought; the matter of emphasis will then largely take care of itself.

The teacher of reading then will secure correct emphasis by an analysis of thought; she will see the uselessness of saying merely, "Emphasize *this* word, and *that* word.' The pupil will respond to such a direction as far as that sentence is concerned, but will gain no power in reading others. It will be necessary for the teacher to read frequently as a model of good emphasis, for many children have no conception of the use of stress. But as soon as pupils appreciate the effects of emphasis they must be taught to place it as the result of their own understanding of the thought.

The best method of procedure is usually by questions which will lead the pupil to see the meaning. As an example, let us consider the following lines from Bryant:

Ere, in the northern gale,
The summer tresses of the trees are gone,
The woods of autumn, all around our vale,
Have put their glory on.

If a pupil shows by his emphasis that he has not understood the meaning, we may question him as follows and hope for intelligent answers:

"What does 'ere' mean?" "Before."

"Why are there commas after 'ere' and 'gale'?" "To show that 'in the northern gale' is out of its natural place or of minor importance."

"What subject is in the second line?" "Summer tresses."

"What is said about them?" "Before they are gone something has happened."

"What has happened?" "The woods of autumn have put on glory."

"What has put on glory?" "The woods."

"What do you think is the central idea of the stanza?" "The woods have put on glory"

"When have they put on glory?" "Before the tresses are gone."

"What are the tresses?" "The leaves."

"Now read the stanza and show me what it means." Probably a pupil intelligent enough to answer as in the above dialogue will read with very good emphasis:

> *Ere*, in the northern gale,
> The *summer tresses* of the trees are *gone*,
> The *woods of autumn*, all around our vale,
> Have put their *glory* on.

In your questioning you sometimes find that the failure to grasp the meaning of a passage is caused merely by ignorance of the significance of a word, or of a figure of speech, or by a general misconception of the whole idea.

11. Breathing. There is one other matter connected with the mechanics of reading which is fundamental and may as well be considered here as elsewhere. It often happens that teachers do not think to give their pupils instruction or drill in proper breathing and so are constantly met by halting, interrupted and unpleasant expression, when a very little practice on the part of the pupils would entirely correct these faults. No one can read well for any length of time without breathing deeply and being careful to draw in the second breath before the first one has been exhausted. Good readers do this as a matter of habit, without being conscious at any time what they are doing, but beginners are very apt to neglect both precautions. Moreover, there are certain places in every sentence where a little pause is permissible, and at these points the skilful reader fills his lungs, oftentimes long before it is necessary. When this is done habitually, the reader can give his whole attention to expression and need never fear failure because of exhausted breath.

It is much easier to breathe correctly when standing in an erect position, with the head and shoulders well up. If, in addition to this, the reader will hold his book in his left hand, high enough so that he can read without depressing his chin upon his throat, he will not be put to any physical inconvenience.

That time is not wasted in any class which a teacher gives to brief, vigorous exercises in deep breathing, and by that we mean breathin which is performed principally by the abdominal muscles, which call into play the large lower lobes of the lungs. If a person raises his shoulders during an inhalation, he is not using his diaphragm properly. Sometimes it may be worth while to take some selection which will not be injured by this travesty of reading and require the pupil to inhale vigorously at every pause. The effect is ridiculous, but it illustrates the point.

12. Emotional Element. Before we pass on to consider more at length the four great elements which should enter into every standard of criticism in reading, we ought to say that the facts with which we have so far been concerned are largely those in the execution of which the intellect and muscles only are involved. A person's articulation may be clear, his pronunciation correct and his emphasis accurate, and he may appear to have a thorough understanding of what he is reading, and yet his expression may be so cold, matter-of-fact and unimpressive that the feeling which the author intended to convey will be wholly lost. In all reading of genuine literature, the emotional element is a prominent one, and every reader aims to arouse in his listeners the same emotions which the author felt. This can be done only when the reader enters into and appreciates the beauty, sentiment and force of what he reads.

We have seen that the first efforts of the reading teacher must be to lead her pupils to comprehend the meaning of the selection; but her efforts should not cease with this, for she has taken but one of the two necessary steps. The second evidently is to arouse in the pupil, by some means, the right feeling. The development of the emotional element requires time—"time to think and time for the picture to come forth in its fullness." A knowledge of the conditions under consideration, or under which the selection was written, is often of great assistance. For instance, one reading Lowell's *First Snow-Fall* has the emotional element strengthened by the knowledge that some months before it was written he had buried a daughter. When the emotional element is developed, one really enters into the spirit of a selection, and not until then will one be able to render it sympathetically and naturally. Time, pitch, quality and force all depend upon the emotional element.

13. Rate. The normal or natural rate of speech varies largely in individuals. Some habitually speak with slow and measured utterance, while from others the syllables flow in torrents. It is impossible to fix an arbitrary standard of rate, but for every individual there is a normal rate which varies from time to time toward slowness or greater rapidity. Good reading demands that these variations of rate should be in accordance with sentiment.

Some pupils habitually speak too rapidly. A too rapid rate may be due to nervousness, to lack of thought or to the pupil's ordinary habit of speech. The first difficulty will not be wholly remedied until the pupil passes out of the self-conscious stage and feels at home in the schoolroom and the reading class. This requires time and care. Pupils are occasionally made nervous by methods of criticism allowed during the recitation. The thoughtless pupil is more frequently met with. To him reading consists in calling words, and before his rate can be reduced he must be trained to think. What we have said about thought-getting applies here. But, in addition to this, these pupils need special attention in the recitation. Much may be done by asking the pupil to close his book and tell you what he has read. Ask him to open the book and read the passage again, trying to read as slowly as he spoke. Additional help will be found in having the pupil repeat sentences whose utterance will require a slow rate. These should be given as drills outside the regular reading lesson. Above all, teach such pupils to *think*, and with the development of thought the rate of reading will be reduced.

The pupil who naturally speaks rapidly will read rapidly, therefore he cannot be expected to read as slowly as the average, but, by calling his attention to his rapid utterance, both his speaking and reading may be considerably improved.

Pupils read too slowly, for two reasons: the selection is so difficult that they cannot comprehend the thought and are unable to pronounce some of the words, or the pupil is naturally slow in everything that he does. The remedy for the first cause is obvious—easier selections should be chosen; the second cause is more difficult to remove. These pupils will naturally read more slowly than the others, but they frequently have as good a comprehension of the thought. Such pupils usually increase their rate as the nervous system becomes more fully developed.

14. Time. Time in reading, then, relates to the rate at which spoken words are uttered. This may be considered fast, moderate or slow. Unless there is reason for some variation, reading is in moderate time. But when, for instance, a sentence is full of meaning or the thought called up is one of sublimity, grandeur, immensity and depth, more time is naturally consumed in the expression of that thought. When, on the other hand, there is lightness, gaity, gladness or urgency in the thought, the time is more rapid. "The relative time apportioned to a word indicates the mind's measurement of it—represents the speaker's judgment as to the amount of meaning or importance that it conveys."[1]

It is not necessary for us to consider examples of moderate time, for the greater part of every pupil's reading will be at that rate. The reason for reading in slow time may be best illustrated by the study of a selection like the following:

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[1] Raymond: *Orator's Manual.*

> Who shall say that when in its follies or its crimes, the Old World may have buried all the pride of its power, and all the pomp of its civilization, human nature may not find its destined renovation in the New?

The wider our reading, the more extended our experience, the more are we sensible of the breadth and grandeur of the ideas conveyed by the quotation just cited. From our reading we know some of the follies and the awful crimes of the Old World; we appreciate the pride of its power, the royal pomp of its governments, and are appalled at the thought that all this shall be buried. Inspiring to an equal degree, however, is the thought that all the grandeur and all the power may again appear in this New World among ourselves. Manifestly it would be impossible for our thoughts to travel as far as we have indicated in the time of a rapid utterance. If we think the great thoughts that the words express, we will read slowly.

Knowing this fact, the method which the teacher should follow becomes apparent. It is useless, so far as training is concerned, to tell the pupil to read rapidly or to read slowly. He must be made to understand and feel the depth or grandeur of great thoughts, and then he will speak no more rapidly than he thinks. The teacher proceeds by a method of indirection. She calls to the pupil's mind images, gives the words the broadest significance, tries to picture the things that are described and then asks that the pupil as he reads shall think the full meaning of the words as he utters them. It is impossible for anyone to see vividly in the mind's eye the racing horse in Holmes's *How the Old Horse Won the Bet*, if it be read slowly:

> Tighter his frightened jockey clung,
> As in a mighty stride he swung,
> The gravel flying in his track,
> His neck stretched out, his ears laid back,
> His tail extended all the while
> Behind him like a rat-tail file!
> Off went a shoe,—away it spun,
> Shot like a bullet from a gun;

The quaking jockey shapes a prayer
From scraps of oaths he used to swear;
He drops his whip, he drops his rein,
He clutches fiercely for the mane.

When the teacher has made her class so interested in reading that they wish to read well, she has only to fill their minds with vivid pictures and their souls with an appreciation of what they are reading, to make the time what it should be.

15. Pauses. Moderation in time is secured not only by slowness in the utterance of sounds but also by the use of pauses. The listener is never quite abreast of the reader; the latter, if skilful, understands the fact and pauses occasionally for his hearers to overtake him. Unless some warning is given of sudden changes of thought, hearers finally fall behind the reader and lose portions of his meaning. Pauses naturally occur between groups of words: therefore, if the pupil's grouping is right, his pauses will be correctly placed, but he may make them too long or too short to produce the best effect. When this occurs it shows that although he may have grasped the thought, he has not fully entered into the spirit of the selection.

Certain it is that punctuation marks do not always signify pauses. It is safe to say that most readers wholly disregard commas, except as they tend to make the meaning clearer. Punctuation marks are for the eye, not for the tongue. "Every passage has a double set of punctuation marks, one visible, the other invisible; one is the printer's work, the other the reader's."[1]

The pupil should know that to pause unexpectedly before words or after them is to make the phrases appear emphatic, and he should remember, also, the necessity of keeping his listeners thinking with him. It is useless to tell pupils to pause here, and pause there, and elsewhere. A knowledge of where and how and when will come only by practice, after an appreciation of the selection is fully gained. What was said in the preceding section is sufficient direction for teaching the art of pauses, except the cautionary remark which the teacher may occasionally make that, "Your reading would be more effective if you paused longer at that place," or, "Evidently your pauses do not make clear the meaning of the selection. I doubt your understanding of it. Explain it."

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[1] Legouve.

16. Pitch. Under ordinary conditions a person speaks upon a certain key or tone which is peculiar to himself. When for any reason his vocal cords are tightened and made to move more rapidly, that pitch is raised, and when the cords are relaxed more than usual, the pitch is lowered. The compass of any voice is its range from high pitch to low pitch. Normally, the pitch of male voices is lower than that of female voices.

The customary pitch or key of the voice is that agreeable medium which allows the greatest range above and below. Unfortunately, many people have the habit of speaking in a key that is strained and unnatural. Teachers very frequently talk upon too high a key, and their pupils as frequently imitate them.

By many repetitions of a brief phrase in different keys we can determine whether our customary key is too high or too low; if we find it so, we can go to a key that is much easier for us and by practice can habituate ourselves to its use in ordinary speech. Teachers will watch their pupils and help them to establish an easy and normal pitch. Over-anxiety to please, excitement and nervousness militate against improvement. Accordingly, the teacher will once more accomplish her purpose by indirection. She will help the pupil to forget himself, will pitch her own voice low, and almost invariably the high, strained pitch so common in children who have been much drilled in school will disappear. Sometimes a pleasant, "*Talk* to me, do not *read* to me" is an interruption that will help the pupil.

At about the age of puberty a boy's voice assumes a lower key. During this period of change some boys have little or no control over their voices and may amuse their classmates and cover themselves with confusion by startling transitions in pitch. Do not often call on such boys to read before their classes, if they are at all sensitive about it. In a little time they will find themselves in control of manly voices, and then they will read with pleasure again.

Pitch is a comprehensive term and in reading includes not only the standard key of sentences, high or low, but also whatever relates to inflection, modulation and melody.

17. Inflection. In every spoken sentence there are heard various turns or slides of the voice to lower or higher pitches. These slides are known as inflections; rising, when the voice slides to a higher pitch; falling, when it goes to a lower pitch, and circumflex, when the two slides are combined on a single word. Normally, the rising inflection indicates that the sense is incomplete, that negation is implied, or that the speaker anticipates the answer *yes* or *no* to his direct question. The falling inflection, on the other hand, indicates completion of sense or that a question may not be answered by *yes* or *no*. The circumflex inflection is used to denote contrast or irony or sarcasm. Sometimes brief passages are read in a monotone, that is, on a single pitch. Ideas of grandeur, dignity and awe are sometimes rendered by a low monotone.

18. Teaching Inflections. To be natural and agreeable, the inflection of a reader's voice must spring from perfect understanding of the meaning and a sympathetic appreciation of the feeling in what is read. Such being the case, there is little the teacher can give in the way of direct instruction and drill, except to inform the pupils what inflections there are and what is their significance and to require them to read examples in rising and falling inflection and in circumflex. This preliminary instruction may best be given through examples, and the teacher will have the opportunity to call attention to the fact that it is the meaning rather than the punctuation that governs the inflection. For instance, we might imagine a teacher saying to one of her pupils, "Will you close the door?" She ends the question with the rising inflection because she anticipates an answer *yes* or *no*, and waits for the pupil to close the door. If the pupil neither moves nor answers, then she says, "*Will* you close the door?" In form her question is still the same, but as there has been no answer to the other, she makes the real meaning of her second sentence a command, and her voice falls. Again, she may have spoken to several pupils and none of them has responded; then she may turn in exasperation to some pupil and say, "Will *you* close the door?" As this is a command, the voice falls at the end of the question, and by placing a circumflex inflection on the word *you*, she intimates in an ironical manner that perhaps if these superior individuals whom she has just addressed will not close the door, the inferior one spoken to may do it. Naturally such a use of the circumflex is not pleasing and does not suggest pleasing ideas.

Inflections, however, are not confined to the ends of sentences, as may be seen in the sentence, "I come to bury Caesar, not to praise him." Here the voice rises almost regularly from the beginning of the sentence to the end of the word *Caesar*, and then falls with equal regularity to the end of the sentence. In this case the comma marks the end of the rising inflection, but again the teacher must combat the idea that the comma affects the inflection. Take the two following lines from *Barbara Frietchie:*

> Up the street came the rebel tread,
> Stonewall Jackson riding ahead.

Here the inflection rises to the end of the word *street*, falls slightly to the word *tread*, is suspended and then falls regularly to the end of the word *ahead*.

In the following lines the inflections are falling at every comma, excepting the first:

> Soldier, rest! thy warfare o'er,
>   Sleep the sleep that knows no breaking;
> Dream of battlefields no more,
>   Days of danger, nights of waking.

If pupils read with incorrect inflections, they should analyze the selection until the meaning is clear and its force is appreciated. Imitation will not count for much. Short sentences will present little difficulty. It is the long, complex sentences in which the melody is varied that cause trouble, and mainly because the pupil is not able to carry the meaning in his mind from the beginning to the end, but loses himself in the thought.

Circumflex inflections are comparatively rare, both in reading and in speech, but occasionally a person falls into the habit of using them frequently. This is seen more often, perhaps, in those who have to do with children, and who, without intending it, have learned to look upon the children as inferiors and speak to them in a spirit of gentle toleration or in a patronizing manner. This habit should be corrected. The following sentences offer a great variety in inflections. Study them carefully, and read them with good modulation. Select many others for the same purpose.

From this disaster, like a spent swimmer, he came desperately ashore, bankrupt of money and consideration; creeping to the family he had deserted; with broken wing, never more to rise.

Half a league, half a league,
Half a league onward,
All in the valley of Death
Rode the six hundred.

"Forward, the Light Brigade!
Charge for the guns," he said.
Into the valley of Death
Rode the six hundred.

"Back!" shouted Bernal full fiercely,
And "Back!" shouted Pablo in wrath,
As his mule halted, startled and shrinking,
On the perilous line of the path.
The roar of devouring surges,
Came up from the breakers' hoarse war;
And "Back, or you perish!" cried Bernal;
"I turn not on Paso del Mar!"

Caution. While exercises of this kind afford opportunity for practice with the older pupils, you should remember that detached passages taken alone are of but little value in securing results. Enough of the setting of each passage must be given to enable the pupil to connect it with the selection from which it was taken, and also to give him some idea of what that selection represents. The stanza from *The Charge of the Light Brigade*, for instance, means but little to a pupil who knows nothing about the poem. But when he learns what the poem represents, he invariably becomes enthused with its spirit and will read the passage with the right emphasis and inflection.

19. Melody. The term *melody* is used to denote the pitch, inflection and modulation of the voice which make speech effective. "The melody represents the mind's motive, or indicates its purpose in using the particular phraseology to which the melody is applied." Melody in speech differs from melody in music, where the variations in pitch are exact and made from a fixed and arbitrary standard. Some authorities on teaching reading place under melody what in this lesson is treated under emphasis, pitch and inflection.

20. Quality. In reading, as well as in speech, pure, soft, rich and agreeable tones are much to be desired, and are the standard always to be sought; but the structure of the vocal cords, the condition of a person's health and his temperament all unite to establish a standard peculiar to himself. It is owing to quality that we are able to recognize the voices of our friends. Natural conditions, however, may be very largely controlled by training, so that one of the most important services that the teacher can render to her pupils is to fix for them an agreeable standard. Imitation is a ready factor in this particular respect, for pupils unconsciously assume to a large extent the tone which they hear.

However, the teacher must not rest content with this phase of instruction. She will find many pupils who speak in harsh and disagreeable tones and must determine as far as possible the causes for it. Sometimes the disagreeable tones are to be attributed to catarrh or to defects in the vocal organs, in which case it may be difficult or impossible to improve them. The majority of cases, however, are owing to nervous tension, faulty breathing, strained muscles, force, or lack of interest and feeling. By removing these causes, one after another, the teacher will secure the quality which she desires, and, having established this, she will be able from time to time to secure those variations which in reading indicate the changing emotions.

Tenderness, anger, fear, awe and other feelings communicate themselves through the human voice in changes of quality which the hearer quickly recognizes. If the child loves courage and bravery, if he loves daring deeds and heroic exploits, he will be moved to admiration at their recital, and his voice will naturally ring with its full, stirring quality. The softer emotions, such as love and tenderness, will move to a very different rendition, providing the feeling is sincere. Boys of intermediate and grammar grades, however, are liable to scorn displays of sentiment, and it is often difficult to make their voices sympathetic. Persistent efforts to do this may be deferred till they have learned again to feel as their elders do and as they did in their earlier years. On the other hand, they yield quickly to courage and daring and manliness. Study the following selections with care, giving each its necessary setting, then read them aloud with special reference to quality and inflection. You should also add to these a number of others of different character and thus secure a greater variety upon which to practice.

Macbeth. I have done the deed. Didst thou not hear a noise?
Lady Macbeth. I heard the owl scream and the crickets cry.
Did not you speak?
Macb. When?
Lady M. Now.
Macb. As I descended?
Lady M. Ay.
Macb. Hark!

Ho! gallant nobles of the League, look that your arms be bright!
Ho! burghers of St. Genevieve, keep watch and ward tonight!
For our God hath crushed the tyrant, our God hath raised the slave,
And mocked the counsel of the wise, and the valor of the brave
Then glory to his holy name, from whom all glories are;
And glory to our sovereign lord, King Henry of Navarre.

He therefore turning softly like a thief,
Lest the harsh shingle should grate underfoot,
And feeling all along the garden wall,
Lest he should swoon and tumble and be found,
Crept to the gate and opened it, and closed,
As lightly as a sick-man's chamber-door,
Behind him, and came out upon the waste.
And there he would have knelt, but that his knees
Were feeble, so that falling prone he dug
His fingers into the wet earth, and pray'd.

21. Force. As in the other elements which enter into our standard of good reading, force manifests itself in three degrees. There is first the standard force, which is the customary, normal amount of energy which we put into our expression. As the energy of utterance decreases, we have force below, and as the energy increases, force above, the standard. But as in time, pitch and quality, there is no universal normal standard. Each individual is in a sense a law to himself, though much may be done to moderate the speech of some and to put force into the tones of others.

The tendency of teachers is to speak with too much force. Because of the difficulty they have in making their words understood or in securing obedience to their commands, they speak with a great deal of energy and often try to secure results by noise. It is difficult to make a much greater mistake, for one of the things which commands attention and secures obedience is a quiet, gentle, even voice which must be listened for if it is heard, providing always that there is back of this voice a personality which commands respect. Timid, hesitating, nervous children speak with too little force, from a natural desire not to attract attention or sometimes with the hope that they will not be understood; while the positive, assertive child uses more force than is necessary. In the reading classes the pupils imitate to a large extent the force of the teacher, but to secure those variations from the standard which show good expression, the teacher must also, as she has frequently been told before, create in the souls of her children an appreciation of what is being read.

Drill exercises are valuable in the way of an examination which shall determine for the teacher the habitual standard which her pupils use, and from time to time to exercise the voice and to confirm the pupil in his belief that he can control it. The really valuable part in training comes not in drill exercises but in the spontaneous expression of feeling in reading good selections.

In an earlier section we have treated of emphasis. (See Section 9.) That phase of emphasis which depends upon stress might more properly be considered in this connection, for while there is a certain characteristic force which extends throughout a paragraph or a longer selection, there are from time to time variations in force which bring emphatically before the listener important words and phrases.

Read the selections that follow, with special reference to force, emphasis, quality, inflection, pitch and time. Find many more good examples for reading and try to make the thought that is in them express itself through your voice.

Sweet and low, sweet and low,
  Wind of the western sea,
Low, low, breathe and blow,
  Wind of the western sea!
Over the rolling waters go,
Come from the dying moon, and blow,
  Blow him again to me;
While my little one, while my pretty one, sleeps.

FROM WEBSTER'S "REPLY TO HAYNE"

When my eyes shall be turned to behold for the last time the sun in heaven, may I not see him shining on the broken and dishonored fragments of a once glorious Union; on states dissevered, discordant, belligerent; on a land rent with civil feuds, or drenched, it may be, in fraternal blood! Let their last feeble and lingering glance rather behold the gorgeous ensign of the republic, now known and honored throughout the earth, still full high advanced, its arms and trophies streaming in their original luster, not a stripe erased or polluted, not a single star obscured, bearing for its motto no such miserable interrogatory as "What is all this worth?" nor those others words of delusion and folly, "Liberty first and Union afterwards;" but everywhere, spread all over in characters of living light, blazing on all its ample folds, as they float over the sea and over the land, and in every wind under the whole heavens, that other sentiment, dear to every true American heart—Liberty *and* Union, now and forever, one and inseparable!

INCIDENT OF THE FRENCH CAMP

You know we French stormed Ratisbon;
A mile or so away,
On a little mound, Napoleon
Stood on our storming day.
With neck out-thrust, you fancy how
Legs wide, arms locked behind,
As if to balance the prone brow
Oppressive with its mind.

Just as perhaps he mused, "My plans
That soar, to earth may fall,
Let once my army leader Lannes
Waver at yonder wall,—"
Out 'twixt the battery-smokes there flew
A rider, bound on bound
Full galloping; nor bridle drew
Until he reached the mound.

Then off, there flung in smiling joy,
And held himself erect
By just his horse's mane, a boy:
You hardly could suspect—
(So tight he kept his lips compressed,
Scarce any blood came through)
You looked twice ere you saw his breast
Was all but shot in two.

"Well," cried he, "Emperor, by God's grace
We've got you Ratisbon!
The Marshal's in the market place
And you'll be there anon,

To see your flag-bird flap its vans
Where I, to heart's desire,
Perched him!" The chief's eye flashed; his plans
Soared up again like fire.

The chief's eye flashed; but presently
Softened itself, as sheathes
A film the mother eagle's eye
When her bruised eaglet breathes.
"You're wounded!" "Nay," the soldier's pride
Touched to the quick, he said,
"I'm killed, Sire!" And his chief beside,
Smiling, the boy fell dead.

Robert Browning.

METHODS

22. Introductory. Thus far we have discussed the matters with which every teacher should become acquainted and in which she should give her pupils training. In connection with some of this discussion exercises have been suggested and plans of work outlined. We now wish to show more specifically how the suggestions given can be applied to the reading lesson.

23. Special Lessons. In the main, the reading lesson should be devoted to reading by the pupils, but in order that their reading may be improved more or less drill work is necessary. This work should be taken up in special lessons which will occasionally take the place of the reading lesson. Suppose the class has never received instruction in grouping; they must learn to do this before they can read intelligibly, and one or two lessons devoted to such exercises as those suggested in Chapter One, Sections 13 and 14, will more than repay the time spent. In order that these special lessons may accomplish their purpose, you should hold in mind the following points:

(a) One Thing at a Time. You will doubtless notice many faults in your pupils' reading, and in your zeal to remedy these you may attempt to correct too many at once. Such a course discourages the pupils by calling their attention to so many errors that they get the idea that they can never conquer the difficulties. It also divides the pupils' attention among so many different points that they do not remember any distinctly. Take the fault which needs attention first, such as that of failing to group words, and drill upon that until the pupils have gained a good degree of power in grouping. Then take the next fault and treat it in the same manner. Proceed in this way through the term, and the class will make steady progress.

(b) USE OF THE READER. Special lessons will be much more effective if selections for reading are chosen with a view to giving practice upon the points which the lesson has emphasized. To this end, you should make a careful study of the reader, so that you can choose such selections as will be most helpful. There is no occasion for reading the lessons in the order in which they are given in the reader.

(c) FREQUENCY. There is no stated time at which special lessons should be given. They should occur as often as the class is ready for them, that is, each lesson should be followed by enough reading lessons to fix firmly in the minds of the pupils the principles presented, before another special lesson is given. Unless this precaution is taken, the pupils are liable to become confused by the burden of the work presented to them, because it has been given them more rapidly than they can comprehend it. You should not infer, however, that any one of these points must be brought to a high degree of perfection before another is taken up. In fact, all points in the reading will be emphasized more or less in every recitation, but it is well to give special attention to certain points for some time and then to bring more stress to bear upon others.

24. Assignment of the Lesson. Among the causes of failure to secure results in the reading class, lack of assignment or failure to make proper assignment of the lesson may safely be considered as chief. Concerning this, Supt. Spaulding, in his *Preventing and Correcting Defective Reading*, says: "Ordinarily no lesson receives less, while hardly one needs more careful preparation by the teacher than does the reading lesson." The study of the reading lesson is too often looked upon by both teacher and pupils as of little consequence, or as of a mere looking up of words difficult to pronounce. When the reading lesson is properly assigned, such ideas will not prevail. The assignment should include:

(a) SELECTION OF THE LESSON. The reading lessons should be so planned that each has its definite purpose. Becoming acquainted with the matter to be read and the formation of a plan of work are the first steps in the teacher's preparation. With the purpose of the lesson well in mind, the teacher will make such an assignment as will direct the pupils' study to the points she wishes to emphasize.

(b) THE SETTING. The setting is necessary to an understanding of many selections, such as *Maggie Tulliver and the Gypsies*, *Incident of the French Camp* (Section 21), *In School Days*, *Paul Revere's Ride* and many others which these will recall. When the class is to read such a selection, enough of the setting should be given to enable them to understand it. For instance, the class cannot get the full meaning of *Maggie Tulliver and the Gypsies* unless they know what kind of people the gypsies are and how they live. They cannot get the pictures presented in *In School Days* unless they have an idea of the old-fashioned country schoolhouse, nor can they appreciate *Paul Revere's Ride* unless they know enough about the Revolutionary War to enable them to understand what Revere did, and enough about the Civil War to grasp the purpose Mr. Longfellow had in writing the poem.

When the necessary references are accessible and the pupils are old enough to obtain the information, their attention should be called to the points to be looked up by questions written upon the board. But when this is done the pupils should be told just where to look for the information, unless they are already accustomed to the use of the reference books.

(c) WORDS. Attention should be called to all words whose meaning the pupils may not know and to all words which they may not be able readily to pronounce.

(d) THOUGHT-GETTING. We have already emphasized the importance of thought-getting, and in the assignment of most reading lessons attention should be called to it. This is most easily done by writing on the board questions whose answers depend upon the pupils' understanding of the thought. For illustration, in the stanza,

> Still sits the schoolhouse by the road,
>   A ragged beggar sunning;
> Around it still the sumacs grow,
>   And blackberry vines are running,

such questions as these will enable you to tell whether or not the pupils have the thought: What do you see in the picture? What are sumacs? What does the second line mean? What does the last line mean?

(e) DIFFICULT PASSAGES. Some selections contain passages of more than ordinary difficulty, such as the closing paragraphs in Webster's *Reply to Hayne*, and the pupils may not, without aid, be able to grasp their meaning. In such cases it is usually helpful for the teacher to read the passage to the close, when the lesson is assigned; then to supplement her reading with questions as suggested above.

(f) ALLUSIONS. Nearly all selections of literature contain allusions, and such references to these should be made as will enable the pupils to understand them. (See Chapter One, Section 21.)

(g) SUGGESTIONS. (1) The length of the lesson is measured by the amount of work necessary to prepare it, not by the number of pages it includes. Lincoln's *Gettysburg Address* would constitute a longer lesson to the average class than several pages of *Rip Van Winkle.*

(2) The assignment should be definite. The pupils have a right to know just what is expected of them.

(3) Each point called for in the preparation of the lesson should be tested in the recitation; otherwise, the pupils will become careless in their study.

(4) The test of the assignment is the interest which the pupils manifest in their study of the lesson.

25. The Recitation. In the recitation the efforts of both teacher and pupils culminate in results. The reading recitation should be systematically planned and then so conducted as to carry out the plan.

(a) PURPOSE. The main purpose of the reading recitation is to give the pupils opportunity to read aloud. With an occasional exception, the greater part of the recitation period should be devoted to reading. The exceptions will occur when it is advisable to give a special lesson and when the selection to be read is so difficult that a recitation period should be given to its discussion before reading.

(b) DIVISION OF TIME. No specific rules can be given for dividing the time devoted to the recitation. Bearing in mind that the following points should receive attention, the teacher must judge from the nature of the work how much time is necessary for each. The points are: (1) questioning the class for a knowledge of their understanding of the selection; (2) tests on the pronunciation of difficult words; (3) reading and criticism; (4) assignment of the next lesson.

You will see at once that the time devoted to each of these points will vary in different recitations.

(c) THE READING. All obstacles to expression should be removed before the reading begins. Many teachers err by having the pupils read the selection first and explaining it afterwards. Since expression depends upon thought, this method of procedure is pedagogically wrong. Be sure that the pupils understand the selection and that they can pronounce all the words; then they will be free to give their attention to the expression of the thought.

When reading, the pupil should stand erect, hold the book in his left hand at a distance of from twelve to fourteen inches from the eye, and at such position that a line drawn from the eye to the book will form a right angle with the page. While one pupil is reading, the others and the teacher should listen with closed books. It is the business of the reader to make his listeners understand what he is reading, and it is no more than fair that he have the opportunity to do so. Again, if the pupil has prepared his lesson, he is not only willing but anxious to read, and if class and teacher listen with closed books, he has a much stronger stimulus to read well than when he knows that all are following the page closely for the purpose of catching him on some mispronounced word or other slight slip of the tongue. These are minor matters and should not interfere with the expression of the thought.

(d) CRITICISM. Many a reading recitation is ruined by the kind of criticisms offered and the method in which they are given. Children must be taught that true criticism does not consist of mere fault-finding, but that it includes praise for work well done as well as censure for that poorly executed. Pupils should also be taught that the chief thing to criticize is the expression of thought. Did the reader express the same idea of the passage that you have? If not, wherein does your idea differ? Show us the difference by reading the passage. Are there others who have a still different opinion of the passage? Read it so as to bring out your idea. Criticisms conducted according to this plan will soon transform the class from a band of fault-finders into a group of earnest, thoughtful listeners.

Another important point in criticism is that *the pupil should not be interrupted while reading.* In too many classes as soon as one member begins to read, the hands of the other members begin to flutter. Such a demonstration is enough to disconcert a hardened campaign orator, and it is nothing short of barbarism to allow it to continue. When you find a class addicted to this habit, ask each pupil how he enjoys reading with the hands of the others fluttering about him. It is needless to say what answer will be received. After such a canvass, say something like this: "We have unconsciously fallen into a bad habit. I know that you are all too gentlemanly and ladylike to do what you know would annoy any member of the class while he is reading, so when you are tempted to raise your hand, just stop and think how this affects you when you are reading, and I am sure your hand will not be raised until the one reading has finished." Presenting the matter in this light and calling attention to it as often as the pupils forget, will soon rid the class of a pernicious habit. When a pupil has finished reading, let all who have criticisms to offer raise their hands and give each a chance to state his criticism. When several have the same criticism the hands of all should drop as soon as it is stated by one. Train the pupils to criticize in a kindly, helpful spirit, so that they will look upon the reading class as a place where each is to help the others, and you will be astonished at the progress which will follow the development of such a spirit.

(e) QUESTIONS. In Volume Three, pages 205, 206, we have emphasized the importance of questioning, and shown what good questions are. What is said there applies in a peculiar manner to the work of the teacher in the reading recitation. The question is her most helpful instrument in assisting the pupil to correct his errors, interpret the thought and become self dependent. It is practically useless to tell a pupil to read faster or slower, or to emphasize certain words. While he may follow directions in reading the passage, he gains no power to read the next passage better. The question teaches him to think, and as he becomes thoughtful his power of interpretation and of expression increases. Most of the teacher's criticisms should be in the form of questions.

26. Drills. In the foregoing sections of this lesson and in Chapter One, we have made frequent references to drills. From these references it should not, however, be inferred that drills are to interrupt the reading. Sometimes a drill of one or two minutes at the beginning of a recitation may help pupils to overcome difficulties in articulation and pronunciation, but in most cases the drills should be given at some other time. Whenever they are given they should be brief, rapid and to the point. Drills should be confined to those exercises which will aid in articulation, pronunciation and thought-getting. Drills on emphasis, pitch and other elements of expression in themselves are useless and should not be attempted.

27. Supplementary Reading. Every class should be supplied with supplementary reading, but unfortunately, the financial conditions in many districts keep this supply within narrow limits. In grade, the supplementary reading should be easier than the reader in use. In subject-matter it should be interesting and of such nature as will appeal to the children. Boys in the fourth reader class, for instance, will like biographies of the childhood and youth of eminent men, tales of pioneer life and of Indians. If books of this kind are well written, they are also quite interesting to the girls; however, the latter usually prefer stories. There are so many books devoted to supplementary reading that almost any taste can be suited, and each city and state has lists of those in general use within its borders. Only one caution is necessary in connection with their selection: The books should be chosen primarily for the purpose of giving practice in reading, not for the information they contain. If the book selected is valuable for both purposes it is doubly useful.

28. Sight Reading. By sight reading we mean reading which pupils do without previous preparation. Only one book is necessary for this exercise. Give the book to a pupil and let him read a few paragraphs or stanzas, then pass it to another. The limited time of the recitation may not admit of each pupil's reading at a single exercise, but at the next exercise you should have those read who did not participate on the preceding occasion. Another good way to provide sight reading is to take a story or selection from a paper or magazine. Cut this into sections and paste each section on a slip of paper; then number the slips in the order in which they should be read and distribute them so that each member of the class has one. Each pupil reads what is on his slip. The objection to this plan is that most of the pupils will have opportunity to look over their sections before reading.

Sometimes it is a good plan to have a general sight-reading exercise, which will include the entire school. Arrange the pupils in groups, according to their reading ability, and place the groups in different parts of the room. Each group has a book from which one of the pupils reads. There are as many reading at a time as there are groups, but if the exercise is rightly conducted, and interesting matter is provided, the groups will not disturb each other. The children of each group will be too much interested in their own story to listen to the reading of the others.

There is a great difference of opinion among teachers of reading as to the value of exercises in sight reading. Some think sight reading should be used very sparingly, because only adults of some experience can read well at sight, and to ask children to make the attempt leads to embarrassment and finally to carelessness. Those of the other opinion claim that most of the reading done out of school will be sight reading, and that the pupils should have all the practice they can under the direction of the teacher. Matter for sight reading should be easy for the class and of an interesting nature. When these precautions are taken and the work is carefully supervised, there is no doubt but that sight reading can be made very helpful. (See Chapter One, Section 23.)

29. Obstacles to Expression. There are a number of obstacles to expression which must be removed before the child can read well. Articulation, pronunciation and thought-getting have already been discussed; in addition to these we may name certain other detrimental features:

(a) THE BOOK. It requires several years for the child to become so accustomed to the use of the book that it does not hinder his free expression of thought. When reading, he realizes that he is using the words of another, and this is more or less of a barrier to his free and natural expression. If the book is of too high grade, the difficulty is increased. This obstacle is most easily overcome by the use of books which can be read easily and which have matter so interesting that the child will forget the book in his absorption in the story.

(b) THE SCHOOL TONE. Many children read, and recite their other lessons as well, in an unnatural tone. Sometimes the voice is pitched on a high key; sometimes a monotone prevails, and in other instances the voice is low and indistinct. There are several causes for this condition. Frequently the school subjects the child to a nervous strain, and this is shown in his voice. Again, he hears others use unnatural tones, and falls into the habit through imitation. Too often the teacher has a school tone herself, although she may be unconscious of it. The pupils imitate the teacher, and as long as this condition exists there is little hope for improvement.

The school tone is one of the most difficult obstacles to remove. First of all, such a school atmosphere should be created as will make the pupils feel at home and remove them from all embarrassment in their work. When the pupil reads in an unnatural tone, ask him to close the book and tell you what he has read. In most cases he will speak naturally. Then ask him to read another paragraph. If he reads as before, repeat the request. Patience and perseverance along this line of training will accomplish much. Finally, the teacher should watch herself and be sure that she always speaks in a natural, conversational tone.

(c) SPIRIT OF THE PUPIL. The pupil must be in the right spirit before he can do his best. He must be interested in his reading and enjoy the reading recitation. More than this, he must enter into the spirit of the selection. He must see the pictures presented and absorb to some extent the sentiment of the author. Then he is carried along by his imagination, and his expression will be free and natural. For instance, one cannot read Holmes's *How the Old Horse Won the Bet* (Section 14) without holding in mind the race-track, the crowd of excited spectators, the frightened jockey and the flying horses, each of the latter straining every nerve to reach the goal. Moreover, when he does see and feel these, he cannot help giving the right expression, if he reads the selection at all. The proper setting and a thoughtful study of the lesson will usually enable the pupil to place himself in the right spirit towards a selection. "Develop the imagination; the soul and the voice will grow through the effort of the soul to go out in expression."

30. Reviews. After the class has read a selection which has required considerable study, it is a good practice to re-read it after one or two weeks. The review will enable the pupils to read the selection in a connected manner, and in so doing they will gain a clearer idea of it. The exercise also shows both pupil and teacher that the class has gained in power of expression. While occasional exercises of this nature are beneficial, too much reviewing destroys the life of the reading recitation. It is not wise to read over and over again selections that the class have mastered, simply because they can read them well. Pupils are more interested in something new.

TEST QUESTIONS

1. (a) What are the two great reasons for teaching reading? (b) How is reading ranked among the public school studies?

2. (a) How would you train a child who says *fader* for *father*? (b) What can you do to correct the articulation of a child who says, "Thith ith Thuthie Thimpkinth"?

3. (a) Give three illustrations from the speech of your pupils or of your friends in which there is an incorrect articulation of sounds in unaccented syllables. (b) Give two examples in which sub-vocals or aspirates are suppressed near the ends of unaccented syllables.

4. Mark the emphasis in the following quotation:

> Let music swell the breeze,
> And ring from all the trees
> Sweet freedom's song;
> Let mortal tongues awake;
> Let all that breathe partake;
> Let rocks their silence break,—
> The sound prolong.

5. (a) Find a quotation, not given in these lessons, which should be read in rapid time. (b) Find one which should be read in slow time.

6. Discuss the pauses the reader should make in the following selection:

> Piped the blackbird on the beechwood spray,
> "Pretty maid, slow wandering this way,
> What's your name?" quoth he.
> "What's your name? It surely must be told,
> Pretty maid with showery curls of gold"—
> "Little Bell," said she.

7. Find outside this lesson (a) one example which should be read in a uniformly high pitch and (b) one which should vary from high pitch to low pitch.

8. Discuss proper inflections for the following:

> Those joyous hours are passed away;
> And many a heart that then was gay,
> Within the tomb now darkly dwells,
> And hears no more those evening bells.

9. (a) What regulates emphasis, and upon what do the quality and force of the voice depend? (b) In which of the elements of reading will a pupil gain most from imitation of his teacher?

10. Discuss the subject of criticism in class reading exercises and show clearly what kind of criticism is helpful.

CHAPTER THREE

READING (CONTINUED)

STUDY OF COMPLETE SELECTIONS

LITERARY INTERPRETATION

1. Explanatory. While the principles discussed in Chapters One and Two apply to teaching reading in all grades, there are additional lines of work that can be attempted with profit in the more advanced grades. The pupils in these grades have attained a degree of maturity which enables them to study larger units of literature as complete wholes, and when the work is properly presented they will find much enjoyment in such study. These larger units should include both prose and poetry, and they should be so selected as to provide a variety of style, subject-matter and authors, but the works of American writers should occupy the greater portion of the time. In order that the pupils may comprehend and enjoy these selections, they must have the ability to see the pictures presented and experience the feelings which actuated the author. Therefore, as preliminary to such work, we call special attention to these points:

2. Description. Some authors show great descriptive power in their writings and make things stand out in our minds almost as vividly as though we were looking at them. In doing this, as well as in accomplishing the other wonderful things their art enables them to do, they use words, phrases and sentences in literal or figurative sense, as best they may, and sometimes with a skill that is little less than marvelous. For instance, Du Maurier writes:

> Before us lies a sea of fern, gone a russet brown from decay, in which are isles of dark green gorse, and little trees with scarlet and orange and lemon-colored leaflets fluttering down and running after each other on the bright grass under the brisk west wind which makes the willow rustle, and turn up the whites of their leaves in pious resignation to the coming change.

Such descriptions call upon the imagination, and an appreciative reader revels in the picture. Pupils might pass it hastily and fail to get its beauty, so we question them:

Does the sea stretch far, far away? As far away as we can see? Is it level, or wavy from the undulations in the ground and the varying height of the fern? Are there many islands in this brown sea? What color are they? What makes them green? (In getting the picture the pupil needs to know nothing about the gorse except that it is a bush with green leaves. Teach him its botanical relationships another time.) Where are the trees? Why doesn't he call them islands, too? What colors are the leaves? Is "fluttering down and running after each other" a pleasing way to describe the falling leaves? Are the trees in the sea of fern? Then how can the leaves fall upon the bright grass? In what direction are the leaves flying? In what direction are we looking? Could we see the leaves falling as well if we were looking from the east or the west as we could from the north or the south? Where are the willows? Are the leaves on the willows yet? Where are the whites of the leaves? Can *leaves* be turned up in pious resignation? What could be so turned up? What does the author expect you to see standing with hands turned up in patient resignation? What is the coming change? What will it mean to the leaves? Now while Mary reads the passage slowly and as expressively as she can, will the rest of you please close your eyes and see the picture she describes?

Of course, not every descriptive passage can be treated so minutely, but something of this kind must be frequently done until pupils gain the habit of making mental pictures of the things they read about. Sometimes the pupils may ask the questions of you, sometimes of one another; and at length you will only need to say to the older pupils, "Picture that," and they will question themselves till they are conscious of the details that make up the scene. Manifestly these are among the finest of exercises for training the imagination. (See Volume Six, page 338.)

Some selections in the readers are almost wholly description; in some there is little or none of it. Poetry and prose alike abound in description, so the teacher will never be at a loss to find it.

3. Emotional Effects. The emotional power of great writers is a thing to be felt rather than to be studied and described. Yet it is only by skilful direction that pupils can be led to expect and find the greatest benefits of literary reading. Certainly one of the greatest factors in the emotional training of the young in their reading. (See Volume Six, pages 348-350.) Unfortunately, not all emotional power in literature is helpful and inspiring, and often the stories and the poetry set before the young move them in the wrong direction. The teacher may do much to counteract the influence of bad literature by giving the pupils an appreciation of that which is good, by teaching them to yield to the influence of good emotions and to fight against the evil.

The range of fine emotional power shown by some of our great writers is astonishing. *Snow-Bound* alone traverses the whole gamut from gaiety to deepest sorrow. It is by striking contrasts that pupils are most easily led to see what is meant by emotional power and to appreciate the wide range of feeling involved. The emotional element increases as the pupil's sympathy with the selection grows; therefore, it is strengthened both by the preparation and the reading of the lesson.

4. Classification of Literary Selections. The prose selections which fill our readers may be classified as stories, essays, speeches or orations, and dialogues or dramas. Some dramas are in poetic form and some are part prose and part poetry. Whatever the selection, we must set about its study in a definite way, if we would accomplish anything satisfactory. An essay requires different treatment than a story; a dialogue, different than either. This is not saying that much of the work is not the same in all cases, but that general principles are modified in special cases. The very nature of the things studied compels this mingling of methods. Essays are intended to expound a theory or give some account of a person, or thing or an event; a story describes an incident or a series of related incidents, and in doing so contains parts that partake of the nature of an essay, just the same as an essay may contain a brief narrative by way of illustration. Yet the main function of the essay is exposition, description or argumentation; the main function of the story is narration. By keeping clearly in mind the nature of the selection, the teacher will be prevented from straying away from right methods.

5. A Selection Interpreted. In the reading class the teacher proceeds by a method of combined questions and comments, but for the selection in this section it is somewhat better to place the application in the form of a running commentary. Such a selection as this is suitable reading for any grade from the fifth to the eighth. A difference in mental attainments of the pupil will make a difference in the amount of assistance a teacher will have to render. In the upper classes she can draw out almost all that is necessary by means of questions, while in the lower grades she must supply some information and assist in procuring more.

The selection we use is quoted from James Lane Allen's *A Kentucky Cardinal* (Harper's), and it may be called *March in Kentucky*:

> (1) March is a month when the needle of my nature dips toward the country. I am away, greeting everything as it wakes out of winter sleep, stretches arms upward and legs downward, and drinks goblet after goblet of young sunshine. I must find the dark-green snowdrop and sometimes help to remove from her head, as she lifts it slowly from her couch, the frosted nightcap which the old nurse would insist that she should wear.

A dipping needle, like the needle of the mariner's compass, is magnetized, but it is suspended so that it may dip toward the earth. If the ship should reach the north magnetic pole, the needle would be vertical. The author feels that there is something in his nature which in March points continually toward the country. He is away from home, out of his normal self, ready to welcome *everything*, birds, flowers, plants, showers, wind and sunshine. He personifies *everything*, and it is by him made to awaken, stretch its arms and legs and drink; but what it drinks is sunshine by the gobletful. Of course, if a growing flower should *drink* at all, it could not drink sunshine; but the metaphor is beautiful. The snowdrop is a little bulbous plant that bears nodding white flowers, sometimes before the snow has left the ground. One of the things he wishes to greet is the snowdrop with its dark green, because he feels that he may be obliged to assist it to throw off the *nightcap* (the bracts that cover the bud) and the snow and ice that encrust it. The author still personifies and makes the snowdrop more vividly human than anything he has yet mentioned. The *old nurse* must be winter or nature.

(2) But most I love to see Nature do her spring house-cleaning in Kentucky, with the rain clouds for her water buckets, and the wind for her brooms. What an amount of drenching and sweeping she can do in a day! How she dashes pailfuls into every dirty corner, till the whole earth is as clean as a new floor!

Again something is personified, but this time it is nature herself, now represented as an old housewife at her spring house-cleaning. When one thinks of the dashing rain storms of March and April, he sees the power of the homely figure that Allen uses. So simple and vivid is it all that it needs scarcely a word of explanation.

(3) Another day she attacks the piles of dead leaves, where they have lain since last October, and scatters them in a trice, so that every cranny may be sunned and aired. Or, grasping her long brooms by the handles, she will go into the woods and beat the icicles off the big trees as a housewife would brush down cobwebs.

In this paragraph there is still a continuation of the prevalent figure of the last, although the figure in the last sentence does not seem so effective as in the first, because it is not an occurrence of every day that icicles hang upon trees to be blown off by the wind.

(4) This done, she begins to hang up soft, new curtains at the forest windows and to spread over her floor a new carpet of emerald loveliness such as no mortal looms could ever have woven.

To call the new foliage *curtains* and the grass a *carpet* is to introduce metaphor into the personification. How beautifully the figure continues through this paragraph—

Nature hanging up her curtains at the forest windows, that is, bringing out the leaflets to fill in gradually a delicate lace-work across the openings between the branches. No one but a poet would think of calling the greensward a carpet and characterizing it as is done here.

> (5) And then, at last, she sends out invitations through the South for the birds to come and spend the summer in Kentucky. The invitations are sent out in March, and accepted in April and May, and by June her house is full of visitors.

Nature is still personified. The invitations which she now holds out are the clean house, the new curtains and carpet, and the general awakening of all inanimate things. To this invitation the birds respond by coming in April and May in great numbers. Many pause but a few days on their way still farther north, but so many do remain for the summer that in June birds are nesting everywhere in Kentucky. With this paragraph the long personification of Nature ceases; at least her personality ceases to be the strongest element in the quotations.

> (6) Not the eyes alone love Nature in March. Every other sense hies abroad. My tongue hunts for the last morsel of snow in the northern root of some aged oak. As one goes early to a concert hall with a passion even for the preliminary tuning of the musicians, so my ear sits alone in the vast amphitheater of Nature and waits for the earliest warble of the bluebird, which seems to start up somewhere behind the heavenly curtains. And the scent of spring, is it not the first lyric of the nose—that despised poet of the senses?

Still in the first sentence there remains a little touch of Nature as a person, but the center of interest shifts now to the author and to his awakening senses. Still he clings to the figure of personification, for his tongue hunts, his ear sits and waits. In the preceding paragraphs everything he has described has been visible to the eye, but there is also something in spring for the senses of taste, hearing and smell. At a concert the audience sitting in the hall before the curtain rises often hears the musicians tuning their instruments. Now by metaphor Allen asks us to see the Kentucky fields and hills as a vast theater in which the songs of the first birds of spring take the place of the tuning of instruments. The sense of smell is not usually dignified in literature, as are the other senses; so when Allen metaphorically calls the nose a despised poet, he attracts our attention, justifying it fully and somewhat amusingly by calling the scent of spring the lyric of the nose, for a lyric is the highest form of poetry.

The meanings of the words and phrases have now been explained, and it remains to get a comprehensive view of the thought in the entire selection. We can always best do this by the form of an outline, as that shows the main line of thought from beginning to end, almost at a glance:

(a) March attracts me and I greet every awakening thing.
(b) Nature house-cleaning:

(FIGURATIVE)	(LITERAL)
(1) Washes corners.	Rain falls.
(2) Sweeps, suns and airs crannies.	Wind blows the dead leaves.
(3) Brushes down cobwebs.	Wind breaks off the icicles.
(4) Hangs up curtains.	Foliage starts.
(5) Puts down carpet.	Grass grows.

(c) Nature's house-warming.
    (1) Birds invited in March.
    (2) Invitations accepted in April and May.
    (3) House filled by June.
(d) March pleases other senses as well as sight.
    (1) Tongue seeks last morsel of snow.
    (2) Ear awaits first song of birds.
    (3) Nose delights in the scent of spring.

Having worked out the meaning carefully, we must spend a moment or two in thinking about it and in calling up to the mind the pictures suggested and in supplying details that Allen has omitted,—awaking March, rain storms, the springing vegetation, the return of the birds, their songs and the new influences that assail our senses. If we cannot read these on a spring day, we can at least by our imagination surround ourselves with some of the conditions he mentions, and as we dwell upon them and think them into the picture in a leisurely, delighted way, we find ourselves in the mood to read well the six paragraphs in succession, without interruption.

6. Study Outlines. If the preceding section has been studied carefully, it will be seen that the comments have elaborated phrases of thought study; but that the teacher may have them a little more definitely in mind and be able to apply them with more skill in her classes, there is placed here an outline of the work that should be done in the study of essays, orations, and such forms of literary masterpieces. Moreover, as will be seen, this is very similar to the plan given for teaching pupils to study, Volume Three, page 213.

The teacher should not think that this scheme is to be followed in its entirety with every selection. Some selections may need very little consideration under some of the items given below, while others would require a great deal. The outline must be adapted to the selection in such a way that no time shall be wasted and no interest killed. If the reading lesson is full of allusions, that is the point to make much of in the lesson. If there is nothing in the words or phrases to require any great amount of time, more attention may be given to outlining the thought. If there are neither beauties of thought nor expression in the piece, there is no use in wasting time in trying to find them. In any case, the study of a real literary masterpiece should not be continued to the point where the pupil becomes wearied and discouraged.

The outline for study is as follows:

(1) Read the selection through from beginning to end, without pausing to get the general scope.

(2) Study the words.

(3) Determine the meaning of the phrases and study their beauty and power.

(4) Discover allusions and explain them.

(5) Examine figures of speech.

(6) Consider the sentences, the thought units.

(7) Master the idea of the paragraph, the grouping of related sentence units.

(8) Determine the leading idea of the whole selection. Express it and expand it.

(9) Read the whole selection expressively and carefully without interruption.

READING STORIES

7. Characteristics. A large portion of the school readers is given up to fiction, in the form of stories and anecdotes, and to sketches of historical and biographical type. All these have certain points in common which give to their study a different character from that in description and exposition. A narrative concerns itself with the deeds of persons or animals, and in studying it we are brought face to face with action. It is impossible for us, however, to be made to understand all that is involved in personality and action without the use of description and exposition. The strictly narrative parts of any selection are usually of such a nature that little study is required upon the words, and the drift of the events is so evident that one may become interested and read from the beginning to the end without ever having a very clear comprehension of it and certainly without getting from the selection all that the author put into it when it was created.

8. Enjoyment in Reading. Enjoyment in reading doubtless comes to the greatest number of people through narrative in the form of fiction. Enjoyment is most assuredly a function of reading, and it is through no desire to lessen it that we urge people to read fiction as it should be read. Our tastes are susceptible of cultivation in reading just as they are in anything else, and they are constantly undergoing change, whether we will it or not. Boys and girls of fourteen or fifteen do not care for the stories which they read with avidity at seven or eight, and men and women rarely find a great amount of pleasure in the stories which they enjoyed in early youth. If the taste changes and the capacity for enjoyment varies, it stands to reason that the teacher should do what she can to put the pupils in the way of improving their tastes, so that as the years go on they may select better and better reading. (See pages 25-26, Sections 24 and 25.)

9. Importance of Fiction. Enough has been said to show that a person's education may be very seriously affected by his choice of fiction and the manner in which he reads it. That conclusion was reached, moreover, in the consideration of fiction merely in its power of entertaining. But other characteristics make it still more powerful. Not only are we led to see the actions of people, but we are led to inquire into the reasons for their behavior and to decide upon the rightness and wrongness of their conduct. In addition to this, some short stories and many longer novels are ambitious and more or less successful efforts to expound a theory of life or to advocate profound principles of life. There are novels capable of teaching great lessons in philosophy, art and religion.

10. Elements in the Study of Fiction. The principal elements of study that are peculiar to the narrative, especially as typified in fiction and as met in school exercises, are the persons in whose actions we are interested, the devolopment of character in each of these, and the plot or plan of the story. Of course, the word *persons* here must be understood in a wide sense, covering the lower animals as well as human beings. So far as the purposes of study are concerned, it matters not whether the principal character in the story is an animal or a man.

11. The Plot. The chief incidents which form the bare outline of a story constitute the plot. Usually these may be expressed in very few words, as when there is but one chain of incidents constituting a simple plot. When, however, there are several primal series of incidents which converge to a final climax, the plot becomes complex and is then more difficult to express. However, even in the latter case, it is usually impossible to give the central idea of the narrative in very few words. Practice in doing this is exceedingly helpful to any reader.

It is the plot which interests most readers, and yet many, perhaps the majority of people, who read for the plot fail to get all that it has to offer because of their failure to appreciate the art with which the author has arranged his material. They never see how the secondary incidents lead up to those of greater importance or feel any appreciation of the logical method in the construction of the plot.

12. The Persons. There are one or two persons or characters in every story in whom the reader is chiefly interested. In a long story or novel, many other persons are brought into it from time to time, and the reader's interest is more or less diverted toward them; but always in stories and novels possessing unity enough to make them great, the secondary characters are not permitted to draw away the interest of the reader. Once in a while a great writer, perhaps unconsciously, permits himself to be overpowered by his own interest in a secondary character and mars the unity and beauty of his work. Ordinarily, however, we very soon become interested in the hero and heroine and follow them through the story.

13. Development of Character. Sometimes an author in the very beginning of his story describes the character of the individuals who are to appear before us, and the events of the story occur in so brief a space of time that the person does not change during our acquaintance. Ordinarily, however, in every ambitious piece of fiction there is a marked development or change in the character of the persons between the time they first appear in the story and its close. Often this development of character constitutes a very large portion of the interest in the story, if it does not really constitute a part of the plot. The more a reader's attention is called to the study of character and its development, the more does he find of interest and value in his reading.

14. The Emotions. Authors deliberately endeavor to arouse the emotions of their readers, particularly in fiction. They do not always do it by direct appeal, but they set forth the incidents of the plot and describe their characters in such a way that the reader is carried away by his interest. In studying the emotions involved in a narrative, we find that very frequently those of the reader are very different from those of the actor in the story. For instance, while the villain in the play is gloating over his evil deeds, we feel disgust and anger, and when retribution seizes him and he is suffering, we perhaps feel little sympathy at his downfall. It is worth while to study ourselves in connection with our reading.

15. Scenes. Narratives are more or less dramatic, and usually present themselves to us in a succession of scenes in some respects not unlike those of a play, and not infrequently drawn in vivid and picturesque colors. While the center of our interest may be in the persons and their acts, we can always afford time to revel in fine description and can sensibly increase our pleasure by studying the effect of surroundings upon character.

16. Method of Instruction. From what has been said of the characteristics of the narrative and their influence upon a reader, it is evident that any method of instruction which claims to be good must take all these elements into consideration; that is, it is not fair to allow pupils to pass through the grades of school without having found out in their reading what they may expect to learn from a story and how they may make it most delightful and helpful. They must learn not only what the elements of a narrative are, but how to find those elements and how to examine them intelligently. A method for the accomplishment of this follows.

17. Studying Plots. The first phase of studying a story concerns itself with the plot, and the requisite for it is that the pupils shall have read the whole story. With younger pupils, the study comes after the piece has been read in class, with older pupils the assignment may be the reading of the entire story before coming to class. It is not necessary that this reading should be a study. Pupils should rely on their own knowledge and on the context for the meaning of words and should not go to reference books for information unless to do so becomes absolutely necessary. The recitation may be conducted by questioning in the following manner, the teacher giving information as it is needed, but relying largely upon what the pupils have learned:

> What is the first incident in the story? What happens in the second incident? What is the third incident? and so on. Which of these incidents are essential to the thread of the story? Which may be discarded without destroying your understanding? Is any incident in the nature of an introduction, intended merely to attract your attention and excite your interest? What is the one great incident to which the others seem to lead? Is there an incident whose purpose seems to be to conclude the story, following the great incident or climax? Group the incidents under these heads:
>
> Introduction.
> Growth of Plot.
> Climax.
> Conclusion.
>
> Did the plot attract your interest at the start? Did it hold you to the end? Did you guess the end before you read it? Was the plot exciting? Was it probable? Were any incidents absurd or unreasonable? Were any unpleasant? Did you enjoy it? Please put the plot into a single statement, if you can, and make the statement as brief as possible. (The plot of Irving's *Rip Van Winkle* may be expressed thus: Rip, a lazy, good-natured man, scolded by his wife, flees to the mountains, drinks from a ghostly flagon and sleeps for twenty years. On awakening, he returns to his village home, finds many changes, but is recognized and makes new friends.)

The time required for such a lesson will vary with the age of the pupils and their familiarity with the idea. After a number of stories have been analyzed in this way, the boys and girls will become surprisingly skilful and will sometimes astonish you with their pertinent comments and criticisms on the author's method of handling his plot. Sensational literature will be less attractive to pupils who have grown critical and know what is good.

18. Studying Persons. Some stories are better for plot-studies and others for studying the persons, but in the preliminary lessons in persons it is well to use stories in which the plots have already been discussed. The following is a good method of procedure:

Who is the person in whom you were most interested? Is there anyone else almost as interesting? In whom do you think the author was most interested? Is that the person in whom the author wished you to become most interested?

What persons have a secondary interest for you? Are there any still less interesting and less important? What is the relation of these inferior characters to the principal character? Why are they (individually) introduced into the story?

Study the principal character after the outline which follows, questioning freely, rapidly, in an endeavor to make the pupils *see* the people:

- Personal Appearance
  - Height
  - Form
  - Features
  - Hair
  - Clothing
  - Carriage
  - Manners
  - Habits
  - Actions

19. Studying Character. Having learned how the persons of a story look and act, we wish to know what they really are. In literature, the character of a person is shown (1) by what the author says of him; (2) by what he says of himself; (3) by what he says on some other subject; (4) by what he does, and (5) by what other people say of him. Accordingly, our pupils should be taught to study character by the evidence gained in the five lines of inquiry above. If the author tells us outright what kind of a man he really is, much of the interest of the inquiry is destroyed. It may then be asked whether the person acts and talks as such a person would act and talk.

Another phase of the inquiry has to do with the development of character in the persons during the time the story covers. We may reach a consideration of character development through such questions as the following:

Was the person of the same character at the end of the story as he was at the beginning? In just what respects was he different? What things made him different? Just how did each influence affect him? Will such things affect all people this way? What was there in the person to make him susceptible to such influences? Might he have risen superior to them? Was his progress upward or downward? When did he begin to go down? Did he know he was doing wrong? Why did he not stop? How might he have avoided the evil influences? Is this the way men usually go down? Did he suffer for his wrong doing? Was he fairly treated? Do you think the author handles the character well?

These questions might be multiplied indefinitely, and every story will suggest new ones. The live teacher will see here some of her strongest opportunities for influencing her pupils for good. It will not be necessary to comment too much on the lesson of the story. If the pupil sees it and appreciates it, there is no necessity of telling him he should profit by it.

20. Studying the Emotions. To a certain extent a study of emotions is involved in a study of character, but it is often wise to give more than incidental attention to the subject. By means of such questions as the following, an interest can be created and the subject made clear:

How did the person act under those circumstances? What were his feelings at the time? How do you know? Had he a right to feel that way? Do his feelings show that he understood what was happening? Did you feel as he did? Does the author expect you to feel as the person did? How did the author feel himself? Did the person express his feelings naturally? Would it have been more natural for the person to have acted in some other way? What would you do if you felt that way? What is the result of indulging in such emotions? What is the opposite feeling to the one the person had?

21. A Simple Outline. The *King of the Golden River* is easily used by a sixth grade, and is an excellent story with which to begin this kind of study. The plot should be studied after the story is read, but if the pupils have answered the following questions during their study of the story, these answers will readily reveal the plot:

(1) Where was this country located? (2) Describe the surface of the region. (3) What kind of mountains surrounded the valley? How were they covered? (4) What are torrents? Where did one of these fall? (5) What was the waterfall called? Why? (6) Why was the valley called Treasure Valley? (7) To whom did the valley belong? (8) Describe Schwartz and Hans. (9) Describe Gluck. (10) Why did the old man want Gluck to let him in? (11) Why did the brothers turn goldsmiths? (12) Why is the story called the *King of the Golden River*?

These questions might be extended, but enough are given to lead to the discerning of the plot, and to show how this work should be approached with a beginning class. More advanced classes can follow the plan given in the next section.

22. A General Outline. It is evident that if a full and complete study is to be made of any "story" in prose or poetry, historical, biographical or pure invention, there are a great many things to be considered and that many readings of the selection must be made before the study can be exhausted. It is not wise to exhaust every phase on every narrative; it may not be necessary to do so on any, but if the teacher has all phases in mind, she can apply to any given piece that kind of study it most richly rewards and can use those portions which are adapted to the age of the pupil. A complete study of a story would consider the points embraced in this outline:

I. Plot:
    Introduction
    Progress
    Climax
    Conclusion
    } Principal and secondary incidents.

II. Scenes:
    Mental pictures
    Relation of scenes to persons and events

III. Persons:
    Principal and secondary
    Functions in the story
    Appearance
    Character and its development:

            By description:
                By the author
                By persons
            By conversation
            By actions
- IV. Emotions:
    - Of the persons in the story
    - Of the reader
    - Of the author
- V. The Lesson:
    - Interest of the author
    - Effect upon the reader
- VI. Truth or falsity of the narrative. (Fiction is not necessarily false)
- VII. Words and their uses. (See Section 2)
- VIII. Phrases and their character. (See Section 3)
- IX. Figures of speech. (See Sections 4–8)
- X. Noble sentiments and memory gems.

READING POETRY

23. Prose and Poetry. Although some of the examples we have given thus far have been drawn from poetry, yet most of our thought has been devoted to the reading of prose, and we have found in it both beauty and inspiration. As we come to study poetry we shall find, however, more of beauty, greater power of inspiration, and the additional charm of music. Added to all this, we learn of the peculiar forms in which poetry is cast.

Unless our pupils have been well taught, their ideas of poetry are vague and not altogether pleasing. They consider it as a kind of reading in which the lines are of even or regular length and each begins with a capital letter; that words at the end of the lines sometimes rhyme, and that they themselves are always being criticised in reading for their singsong tones. Some children find beautiful thoughts in the poetry, some girls admire the sentiment of many selections, but most boys consider it all silly and sentimental. If, however, pupils of these middle grades are led to read in the proper manner, they will change their minds about poetry and find in it greater beauty of form, thought, sentiment and expression than they can find elsewhere.

When one considers the various forms of poetic composition he finds that they are parallel at least to those of prose. In the first place, there are narrative poems which are just as much stories as those that appear in prose. There are lyrics that correspond in finish to the best of essays, and dramatic poems which partake of the nature of the narrative and the essay. Some of the finest bits of descriptive work in the language are found in poetry, and nowhere is the phrasal power of writers shown to so remarkable advantage as in metrical composition. In consequence of this, the methods of study which have been set forth in the preceding sections must be used where applicable to the study of poetry, but when this has been done we have left untouched all those matters of form which, superficially, at least, seem to make the difference between poetry and prose.

24. Structure of Poetry. The teacher will find some knowledge of the structure of poetry very helpful. Accordingly, it seems worth while to present some of the leading facts in a compact and orderly way. Correctly speaking, the word *verse* means in poetry a single line, although commonly it is applied to a group of lines which correspond to the paragraph in prose. The correct name for such grouping is *stanza.* Every verse in poetry may be divided into one or more feet, each of which consists of one accented syllable and usually one or more unaccented syllables. The two great factors in poetic form are meter and rhyme.

25. Meter. In poetry the words are arranged in verses containing a definite number of feet in regular succession. The rhythmical arrangement of these feet into verses and stanzas constitutes the meter. A poetic foot may contain either two or three syllables. If it contains two syllables either may bear the accent, and if there are three syllables, the accent may be upon the first or upon the last.

In poetry the same foot repeats itself regularly throughout the lines or is varied methodically so as to relieve the monotony. In any given poem each verse contains the same number of feet, or the number is varied regularly in the different verses so that symmetry and proportion are maintained throughout.

26. Scansion. When we read poetry so as to bring out the meter, we call it scansion. Our pupils unconsciously "scan" poetry in which the movement is very pronounced, and we reprove them for their "singsong" tone. Faulty as this method of reading may be, it shows at any rate that the pupil feels the rhythm. We may mark the scansion of any given verse by separating the feet with vertical lines and by marking the accented syllable in each foot. Thus:

The break′ | ing waves′ | dashed high′

The marks show that this verse contains three feet, and that each foot is composed of two syllables in which the second is accented.

In the following stanza the first and third verses contain each four feet, and the second and fourth verses contain three full feet and the unaccented syllable of a fourth. Note, also, that in the third line the word *heaven* must be pronounced with one impulse of the breath, as though it were a single syllable:

By this′ | the storm′ | grew loud′ | apace′;
The wa′ | ter wraith′ | was shriek′ | ing;
And in′ | the scowl′ | of heav′en | each face′
Grew dark′ | as they′ | were speak′ | ing.

27. Adaptation. One of the greatest charms of poetry consists in the adaptation of verse, rhyme, rhythm and words to the thought and feeling which the poet wishes to convey. Here, as in the use of colors, the more skilful the artist. the more perfect the blending.

In the stanza quoted above, verse, meter and words all emphasize the gloom occasioned by the storm, while in the following a dainty picture is painted in words:

Little Ellie sits alone
  Mid the beeches of a meadow,
    By a streamside on the grass,
And the trees are showering down
  Doubles of their leaves in shadow,
    On her shining hair and face.

As you read *Lochinvar* you are unconsciously carried along with the hero by the rhythm and meter of the poem:

Oh young Lochinvar is come out of the west;
Through all the wide Border his steed was the best:
And, save his good broadsword, he weapons had none;
He rode all unarmed, and he rode all alone.
So faithful in love, and so dauntless in war,
There never was knight like the young Lochinvar.

In the following you feel the rhythmic motion of the bird on the wing:

    Bird of the wilderness,
  Blithesome and cumberless,
Sweet be thy matin o'er moorland and lea!
    Emblem of happiness
  Blest is thy dwelling place;
Oh to abide in the desert with thee.

In Tennyson's *Bugle Song* the height of perfection is reached; we seem to hear the bugle and listen for the echoes:

The splendor falls on castle walls
  And snowy summits old in story;
The long light shakes across the lakes,
  And the wild cataract leaps in glory.
Blow, bugle, blow, set the wild echoes flying,
Blow, bugle; answer, echoes, dying, dying, dying.

Apply this test of adaptability to the poems in the reader as well as to those selected for more complete study.

28. Rhyme. Strictly speaking, a rhyme consists of two accented syllables having the same vowel sound followed by the same consonant sounds but preceded by different sounds. For instance, *king* rhymes with *sing* but not with *kink*. *Relate* and *debate* rhyme, but *prelate* rhymes with neither.

Double rhymes are those in which rhyming accented syllables are followed by the same unaccented syllables. Thus, *singing* and *ringing* are double rhymes.

In poetry, rhymes usually occur at the ends of verses, though sometimes they are found in the middle of a verse. Verses rhyme in couplets, sometimes alternately, or the scheme may be more elaborate and the rhyming lines appear at regular intervals in various combinations. Some of these have technical names, but the consideration of them is out of our sphere for the present. You will soon find that rhymes are not characteristic of all poetry. Blank verse, the characteristic verse of Shakespeare's plays, is unrhymed, and *Hiawatha* and *Evangeline* are other notable examples of unrhymed verse.

29. Reading Poetry. Our study of poetry thus far shows us that it appeals more strongly to the sense of hearing than does prose, and in order to get from it the greatest pleasure that it has to offer the reader, he must read it aloud. After long practice and great familiarity with poetic measures, the person may read to himself and hear the music as clearly as though he were listening to the voice of an accomplished reader, but this is not true of school children or the uncultivated reader. To get the greatest pleasure from poetry, the pupils must read it aloud and under careful and encouraging criticism. They must catch the spirit and prevailing movement of the poem, and must be allowed to bring that out to a certain extent in their reading. Good poetry is so written that the music almost compels itself to be heard, and in a majority of cases the structure of the sentence is so involved and so different from that of prose that the reader must give more than ordinary attention to bringing out the thought. Everything that we have written about the study and interpretation of prose applies to poetry. It cannot be read well until the meaning takes hold of the reader, until he feels the sentiment and his voice responds to the rhythmical arrangement. But, first and foremost, insist that the pupils shall by their emphasis, pauses and inflections bring out the meaning.

30. A Type Study. Difficult as it is to give in print an example of a good lesson, we print one here, with the expressed understanding that there is probably no teacher who will give the lesson on exactly this plan and no class to which it is adapted just as it stands. Yet the plan and its execution are both good and ought to be eminently suggestive to every live teacher.

The subject selected is the simple little lyric, *Down to Sleep*, written by Helen Hunt Jackson.

(a) THE ASSIGNMENT. *Teacher*: The lesson for tomorrow is a pretty little poem by a very kind lady who did a great deal in her life for some people whom boys are always interested in. Now the lesson in one way is very easy—you won't see any hard words in it. That will give you a chance to find out what you can about the author and to think about the poem, which really is not so simple as it looks. Every stanza ends in the same three words in quotation marks. That will need some explanation. Everyone who loves flowers and growing plants will like the poem, and so will everyone who still loves his mother. I wonder why. Besides, there is a very beautiful thought for us all to carry away. We shall have a fine lesson tomorrow.

(b) THE RECITATION. (1) Preliminary Work. *Teacher:* John, tell me what you can about Mrs. Jackson.

John: She was born in 1831 and died in 1885. She was married twice, once to an army officer, and she wrote a lot of poems and stories.

Teacher: Henry, what can you add?

Henry: Well, her first husband was a major and her second a banker in Colorado Springs. Her chief reputation will rest upon her poems.

Teacher: What makes you say that?

Henry: That's what the cyclopedia says.

Teacher: I see you read to the end of the article, and that's good. But weren't you interested more in other things?

Henry: I thought that was of the most importance.

Teacher: You may be right. What is it, William?

William: I noticed that she wrote a great deal about Indians and that she thought they had been much abused.

Teacher: Well, Mary?

Mary: Her best novel is *Ramona*, and my sister says it is a splendid book. I'm going to read it.

Teacher: It is interesting, but it is sad. If any of you read it you will sympathize with the Indians. Who can add something? Helen?

Helen: She wrote a number of books for children.

Teacher: Maggie?

Maggie: I think I've heard something about her being buried in the mountains.

Teacher: Can anyone tell us about that? No? A few miles out of Colorado Springs is Cheyenne Mountain, and on the side of that, near one of the most beautiful canyons in the country, she was buried. An old pine tree stands at the head of her grave and on its bark are rudely carved the initials by which she was usually known as a writer. Nobody told me about them. What were they?

All: H. H.

Teacher: Many tourists visit the spot, and a custom grew up for each to place a stone on her grave.

Thomas: What, just a common stone?

Teacher: Yes, any kind of a stone the person wishes to place there.

Thomas: But that would make a big, ugly heap, I should think.

Teacher: Perhaps. But isn't it a pleasing thought that each stone means that some person thought kindly of her? You know that the early inhabitants of the British Isles marked the burial places of their great people by cairns, which were merely piles of rocks, and isn't it appropriate that a person who loved the Indians should have this simple monument?

Thomas: Well, I think a fine statue or monument would be a lot better.

Teacher: There are many people, Thomas, who think as you do about that. But now we must read.

(2) The Reading. *Teacher:* Mildred, you may read.

Mildred:

November woods are bare and still;
  November days are clear and bright;
Each noon burns up the morning chill;
  The morning snow is gone by night;
  Each day my steps grow slow, grow light,
As through the woods I reverent creep,
Watching all things lie "down to sleep."

Teacher: How can the noon "burn up" the chill?

Mildred: The sun comes out and makes the air warm.

Teacher: Which way of speaking sounds the better?

Mildred: The way it is in the poem, I think.

Teacher: Why do "my steps grow slow, grow light?"

Mildred: Because I want to be quiet and creep along.

Teacher: Why should you feel that way?

Mildred: Because I am watching things that are going to sleep, and I don't want to wake them up.

Teacher: Why are you "reverent?"

Mildred· Because it is wonderful to see everything going to sleep when winter is coming.

Teacher: Why is that last phrase quoted?

Mildred: I think it is because plants and things do not really lie down to sleep.

Teacher: That's well done. Thomas, read.

Thomas:

I never knew before what beds,
  Fragrant to smell, and soft to touch,
The forest sifts and shapes and spreads;
  I never knew before how much
  Of human sounds there is in such
Low tones as through the forest sweep
When all wild things lie "down to sleep."

Teacher: Who makes up the beds?

Thomas: The forest shapes and spreads the leaves and things for the beds. But I don't see why the poem says *sifts*.

Teacher: Can you help him, Mary?

Mary: Why I have seen it said that "leaves sifted through the trees." I suppose the leaves sift through the spaces among the branches the way flour comes through the holes in a sieve.

Teacher: Does that help you, Thomas?

Thomas: Yes. But I can't get much out of the rest of the stanza.

Teacher: Let me help you. You needn't answer a question until I am through, but keep thinking while I talk. Were you ever in a forest when the leaves were falling? Could you hear them fall? What kind of a sound did they make? Do birds in the fall sing as they do in summer? Can you hear the shrill cries of the locusts and tree toads or the buzzing of bees in autumn? Can you hear the footfalls of the rabbit, the scratching of birds in the falling leaves? When sleepy children go to bed are they as noisy as in the day-time? Do you see what it means, Thomas?

Thomas: I think so, but not very clearly.

Teacher: Helen, what have you to say about it?

Helen: Why, to me it seems to say that when in autumn the plants die down to the ground and the animal life in the woods is disappearing and growing quiet, it is like the sleepy murmur of children who are going into their little beds.

Teacher: Thomas, why are those words in quotation marks?

Thomas: Why, they are quoted.

Teacher: From what?

Thomas: I guess from some poem or other, but I ain't sure.

Teacher: We can leave that now. Henry may read.

Henry:

Each day I find new coverlids
  Tucked in and more sweet eyes shut tight;
Sometimes the viewless mother bids
  Her ferns kneel down, full in my sight;
  I hear their chorus of "good-night."
And half I smile, and half I weep,
Listening while they lie "down to sleep."

Teacher: What are the "new coverlids tucked in?"

Henry: One day I see a flower or an insect and the next day it has gone. The poem says that the disappearance is like children being tucked out of sight in bed at night.

Teacher: Who tucks the children in?

Henry: Mother; and I guess mother Nature tucks in the plants, insects and birds. She's the *viewless mother.* We can't see her, but she's there.

Teacher: Go on, Henry, I like that.

Henry: The ferns get nipped by the frost and fall over as though they knelt. I don't hear anything, but I guess they are saying good night. I could cry, because they are sleeping, but I laugh when I think they will wake up next spring and come out fresh again.

Teacher: Good. What about the quoted words?

Henry: They're quoted. I know them and so do the rest of the boys. We used to say them when we were little children.

Teacher: I think you all know them. Mary may read.

Mary:

November woods are bare and still;
  November days are bright and good;
Life's noon burns up life's morning chill;
  Life's night rests feet which long have stood;
  Some warm, soft bed, in field or wood,
The mother will not fail to keep,
Where we can lay us "down to sleep."

Teacher: What is meant by *life's noon* and *life's morning*?

Mary: I think they mean middle age and childhood, and that grown people understand things that are dim to children; they aren't afraid.

Teacher: What can you say of the next line?

Mary: Why, I think *life's night* means death, probably, and when death comes to an old person it seems as resting as night does to people who have stood all day.

Teacher: That is a beautiful thought, and I believe it is true. That will do, Mary. I think, too, that our great mother Nature will find a soft, warm bed for us when we come to die and that she will be very good and comforting to us when we kneel at her side, lay our heads in her lap, just as we used to do with our own dear mothers when we were little children. And don't you think God or our mother Nature will hear us when we pray just as we used to pray as little children,

Now I lay me *down*.....*to*.....*sleep*?

Now, William, we will all listen "reverently," as the writer crept through the November woods, while you read the four stanzas. Try to make us see the things just as Mrs. Jackson saw them and feel the beauty of the thought as she felt it.

(William reads.)

31. Comments and Cautions. Teachers know that pupils will not answer as well as in the exercise in the last section, yet the answers there are worth studying, and it is worth while to try to keep pupils as intelligent, interested and sympathetic as those were. The questions are intended as models of a great variety of forms, each adapted to its special purpose, and in the asking they are evenly distributed among the members of the class and come so frequently that no pupil is left long at rest.

Questioning may go too far, and in the effort to create interest the teacher may kill it. She must be wide-awake, ready to change to something else at the right moment. The way is always open. Sometimes a very simple thing will make it useless to try to interpret sentiment or beauty. Some child may make so amusing a blunder in pronunciation that all are forced to laugh, or a question may be asked so inopportune that the effect is wholly ridiculous. When such things happen, be good natured and postpone the consideration of sentiment and beauty in your exercise to a more propitious moment.

32. Memory Gems. One of the great services a teacher can render to her pupils is to store their minds with elegant phrases and beautiful selections from literature. In the lower grades she will teach the selections carefully as a regular part of the reading lesson, and from time to time in the grades we are considering she will have the same kind of work done. Pupils, however, early show individual taste, and it is more helpful to lead children to select great and noble passages and commit them to memory because they are appreciated than to cause the memorizing by command. Whenever the learning of memory gems becomes irksome, it is time to call a halt, at least until a new interest can be created. The effort must not be abandoned at any time, but new lines of interest must be sought. When a teacher can arouse enthusiasm in a poem or a piece of prose, she can easily swing the interest into a desire to learn the beautiful or noble piece that so affects its readers.

Pupils may safely commit to memory noble sentiments whose full force they fail to appreciate at the time, for in later years new experiences will help them to interpret what they know, and they will be grateful for the knowledge they unexpectedly find themselves possessing. Accordingly, it is worth while to introduce many brief poems and fine prose passages for the express purpose of having them learned, but it is not wise to give them without any explanation unless their meaning is clearly apparent. Let the selections be numerous and varied enough to attract all kinds of pupils, but in that case do not expect every pupil to learn everything that is presented. Boys and girls enjoy their independence, and it is well to let them choose for themselves a portion of what they learn.

33. Virile Literature. There is a tendency among boys and some grown people to look upon literature, especially upon poetry, as sentimental, and upon a love for it as effeminate. There is no possibility of such a feeling in the mind of a person who has been properly trained. If all exercises were on selections of the type of the one which we have just considered in Section 30, or even of that in Section 2, there might be a little foundation for such a belief, but those particular pieces are types of but two phases of a great subject. There is plenty of manliness in literature and abundant examples for reading which will require all the force of a trained intellect to comprehend. We must do nothing to destroy the virility of reading, but must make it not only the instrument of study but also a means of culture. The wise teacher sees that her classes have a great variety of matter and often leads them into selections that stir the young blood of the manliest boy among her pupils. While there may be fine phrases and elegant structure in such pieces, she encourages the readers to feel the glow of heroism or to warm their souls in the fire of patriotism. Nearly every reader contains a few such things, as, for example, *The Uprising*, by T. B. Read, a study of which is given in the next section.

34. A Patriotic Poem.[1] (a) ASSIGNMENT. In the assignment for this reading lesson the teacher should prepare a careful historical setting, so that to begin with every pupil may have some idea of the importance of the occasion and the fitness of the acts described in the poem.

(b) INTERPRETATION. In the preliminary study there should be brought out at least the facts given below. The teacher will accomplish this by questioning and assistance, according to methods we have previously advocated:

(1) Out of the North the wild news came,
Far flashing on its wings of flame,
Swift as the boreal light which flies
At midnight through the startled skies.

Virginia is south of Massachusetts, where the first battles of the Revolution were fought. News of them traveled with almost incredible rapidity, in spite of the fact that it could be carried no faster than by horseback. Yet before the telegraph or even the railway was introduced, we may speak of the news of a battle as traveling on *wings of flame*. It is a happy thought, too, to compare this fiery message to the *aurora borealis* which lights up the northern heavens in so startling a way.

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[1] *The Uprising* is a selection from *The Wagoner of the Alleghanies*, a poem by Thomas Buchanan Read. The incident is supposed to have occurred in Virginia in 1775, just after the battles of Lexington and Concord.

(2) And there was tumult in the air,
  The fife's shrill note, the drum's loud beat,
And through the wide land everywhere
  The answering tread of hurrying feet,
While the first oath of Freedom's gun
Came on the blast from Lexington;
And Concord, roused, no longer tame,
Forgot her old baptismal name,
Made bare her patriot arm of power
And swelled the discord of the hour.

The colonists had been expecting tyrannical acts and were ready to rebel. There were organized companies of "minute-men," who gathered at once and marched with fife and drum to their meeting places. As they hurried together the tread of one seemed to answer the tread of another. The first gun was fired at Lexington, and it sounded like a great oath that traveled like a storm blast over the country. It was the "shot heard round the world." The next engagement followed immediately at Concord. *Concord* means peace and harmony, and when the village took up the battle against the British her citizens had forgotten the meaning of the name of the town and wildly joined in the noise of fighting.

(3) Within its shade of elm and oak
  The church of Berkeley Manor stood;
There Sunday found the rural folk,
  And some esteemed of gentle blood.
In vain their feet with loitering tread
  Passed mid the graves where rank is nought;
  All could not read the lesson taught
In that republic of the dead.

The scene of the poem is now located in Virginia, in Berkeley Manor, in the church that stood in a grove of elm and oak trees. It was an English, that is, an Episcopal church, and near it was the little cemetery where rich and poor lay buried in equality, where rank is nothing. In the church were gathered the farmers and their families and also the gentry who owned the lands on which the country folk toiled. The difference in rank could be seen in the congregation, for even though the gentry had loitered among the graves, they had not learned the lesson that all men are equal.

(4) The pastor rose: the prayer was strong;
The psalm was warrior David's song;
The text, a few short words of might,—
"The Lord of Hosts shall arm the right!"
He spoke of wrongs too long endured,
Of sacred rights to be secured;
Then from his patriot tongue of flame
The startling words for Freedom came,
The stirring sentences he spake
Compelled the heart to glow or quake;
And rising on his theme's broad wing,
  And grasping in his nervous hand
  The imaginary battle brand,
In face of death he dared to fling
Defiance to a tyrant king.
Even as he spoke, his frame, renewed
In eloquence of attitude,
Rose, as it seemed, a shoulder higher;
Then swept his kindling glance of fire
From startled pew to breathless choir;
When suddenly his mantle wide
His hands impatient flung aside,
And, lo! he met their wondering eyes
Complete in all a warrior's guise.

Picture the interior of the church, the people, the rich in their high-backed private pews; the poor, separate from them. See the pastor rise, clothed in his sacred robe. Hear his prayer for his people and for divine guidance in their strange crisis. None of his hearers knows what is in the pastor's heart. He has long since made up his mind what to do; his talk now is not so much to convince his people as to rouse their feelings, to move them to action. The "psalm" may have included verses 7–14 and 34–43 of the Eighteenth Psalm, and the real text here changed for the sake of rhyme and meter may have been "The Lord of Hosts is with us." Now the pastor speaks of unjust taxation and all the other wrongs of the colonists; he explains the inalienable rights of man, and then, in thrilling words that seem to burn into the souls of his hearers, he proclaims himself an advocate of rebellion, a claimant for freedom from England. Such words startle everybody, making the true American farmer glow with holy joy and the royalist gentry tremble with fear, for to the latter this is real treason.

As his subject grows greater and he throws himself into it more wholly (as the broad-winged hawk rises triumphantly in air), he swings his arm as though holding a sword, calls King George a tyrant and dares him to do his worst. We are reminded of Patrick Henry speaking in the Virginia Assembly:

> "Caesar had his Brutus; Charles I, his Cromwell; and George III" —(here there were cries of "Treason! Treason!" but the orator calmly continued) may profit by their example. If this be treason, make the most of it!"

As he speaks his bewildering words and grows more eloquent every moment, he seems to grow taller and his eyes glow like fire. He looks over his breathless audience, straight into the eyes of every one and finding there the feelings he has sought to create, he knows the right moment has come. See him step forward now and throw his robe open. What marvel is this? A warrior, not a priest stands there!

(5) A moment there was an awful pause,—
    When Berkley cried, "Cease, traitor! cease!
    God's temple is the house of peace!"
The other shouted, "Nay, not so,
When God is with our righteous cause;
    His holiest places then are ours,
    His temples are our forts and towers
That frown upon a tyrant foe:
In this the dawn of Freedom's day
There is a time to fight and pray!"

It must have been a terrible moment when Berkeley, highest of those in whose veins ran gentle blood, called him a traitor and commanded the pastor to stop his wild words. The preacher is not frightened, but thunders back his defiance, saying that God's holiest places are none too holy to protect the people from tyranny. Now is the time to fight as well as to pray.

(6) And now before the open door—
  The warrior priest had ordered so—
The enlisting trumpet's sudden roar.
Rang through the chapel, o'er and o'er,
  Its long, reverberating blow,
So loud and clear, it seemed the ear
Of dusty Death must wake and hear,
And then the starling drum and fife
Fired the living with fiercer life;
While overhead with wild increase,
Forgetting its ancient toll of peace,
  The great bell swung as ne'er before:
It seemed as it would never cease;
And every word its ardor flung
From off its jubilant iron tongue
  Was, "War! War! War!"

With what skill has the warlike preacher arranged it! Just at this moment the trumpet sounds, the fife and drum call and the great bell on the church rings out joyous peals that sound like the summons to war. Even the dead must be startled by such an uproar; the living are so thrilled, so carried out of themselves that they would follow their eloquent leader anywhere.

(7) "Who dares"—this was the patriot's cry,
As striding from the desk he came—
"Come out with me in Freedom's name,
For her to live, for her to die?"
A hundred hands flung up reply,
A hundred voices answered "I!"

Now when the preacher calls for volunteers, a hundred brave men follow him to the terrors of the battlefield, knowing that if they survive the dangers of the field but lose in the struggle, nothing but death as traitors awaits them.

(c) THE PLOT. In studying under this head, the teacher will bring out the highly dramatic plot, making evident at least these facts:

The first two stanzas are used to create the right sentiment, to lead us into sympathy with the revolutionary movement, to prepare us for something fiery and exciting. The third stanza shows us the people whom we are to know and calls our attention to two classes of colonists. The first three words of the fourth stanza introduce the pastor, and at once the action begins, rising to the intensely dramatic climax in the last four lines of that stanza. Then there is a pause and a falling of interest while Berkeley is introduced, but almost immediately we are carried to a second climax in the pastor's reply. Again the interest falls a little at the beginning of the sixth stanza, but rises steadily to the end and finally culminates in the grand climax of the selection when the "hundred voices answered 'I'!"

The incidents are: The pastor rises; the psalm is sung; the text is given; *the pastor speaks; Berkeley interrupts; the pastor answers; martial music aids; the pastor calls for volunteers; men respond.* The principal incidents are italicized in the preceding list.

Brought into small compass, the plot may be given as follows: A revolutionary pastor plans to lead the men of his parish into active rebellion against King George. He does it by an eloquent appeal, by skilful reply to criticism and by the artful and timely introduction of military costume, music and other exciting accessories.

(d) THE SCENE. There is an excellent opportunity to develop beautiful mental pictures of the old church, its surroundings, the graves, the interior of the old church, the pastor in his robe, the congregation in continental costumes of rich and poor. The teacher will help the pupils to supply numberless details, or will send the children to study pictures in history or encyclopedia.

(e) THE PERSONS. The pastor is the central figure, and the only other one mentioned is Berkeley. What may we assume of the pastor's appearance? Was he not of large and powerful frame? Did he not have a firm jaw, large and brilliant eyes and was he not rapid and nervous in his movements? Did he not have a deep, powerful voice and an impressive and dramatic manner of speech? What of his character? May we not assume that he was brave and loyal to his colony, a natural leader, a lover of freedom and intensely patriotic? We must admit, too, that he was shrewd and knew how to bring things skilfully to aid his oratory.

His character is unfolded before our eyes by his words and his actions, with little direct aid from the author.

Berkeley was the aristocrat, proud of wealth and position. He was loyal to his king and angry at the treasonable words and action of the pastor, who, doubtless, owed his position to Berkeley's wealth and influence.

(f) Emotions. Here is an excellent study in strong emotions in the pastor, in Berkeley, and in the people who listened. Turning to ourselves, it is interesting to see how we are led along to the point where we feel that our hands would have been flung up and our voices would have cried out with the others. The author could not have written so powerfully if he had not been likewise stirred. His blood was running warm as he wrote.

(g) The Lesson. Whatever of patriotic fervor the reading communicates to the class is the lesson it has for them.

(h) Word Study. Interesting words, phrases of beauty and aptness and elegant figures of speech abound and may be studied as long as necessary for a full appreciation of the thought, and longer, if the teacher can keep up interest.

(i) Memory Gems. Some of the phrases are bound to cling to the memory, and some passages are worth committing to memory. Boys will enjoy declaiming parts, if not all, of the poem.

WORK BY GRADES

35. Explanatory. Many attempts have been made to prescribe what shall be read in the different grades of public schools. However, it is almost impossible to make any hard and fast rules in this respect. So much depends upon the pupils, the teacher and the surroundings of both, that any course of study laid down in one place must be seriously modified in another. But a great deal may be learned from any course. Teachers must determine what the pupils can read and understand and what they will appreciate, and then make choice from the suggested courses. In the sections which follow, we outline a course of reading which should be reasonably easy in good schools. In any event, it will show an order in which selections should be presented to the pupils. The teacher must remember that the elementary things in reading which should have been mastered by the end of the fourth grade must be taught wherever they have not been learned, even as late as the eighth or ninth grade.

36. Fourth Grade. At the beginning of the year, pupils should read the latter parts of several third readers if possible, and before the end of the year should be well introduced to the easier selections in several fourth readers. If the pupils have but one series of readers and the school does not furnish others, then supplementary matter of some kind must be supplied. The selections in this grade should be simple, and the pupils should be given an abundance of them in order that they may read much and learn to love reading. The following are the items of instruction that are of special moment in this grade:

(1) The dictionary and how to use it. See *Teacher's Guide.*

(2) Drills in articulation. See pages 30–32, Sections 3, 4, 5.

(3) Pronunciation. See pages 34–35, Section 7.

(4) Emphasis. See pages 37–38, Sections 9 and 10.

(5) Breathing. See page 39, Section 11.

(6) Elementary work in the topics treated in this course on pages 40–54, Sections 12 to 21, inclusive.

(7) Elementary work in the topics treated in this course on pages 74–80, Sections 7 to 21, inclusive.

(8) Reading by the teacher from selections which would be a little difficult for the pupils to read themselves.

(9) Introduction to library books; simple explanations of how to examine and how to use them. See pages 25, 26, Sections 24 and 25.

(10) Supplementary reading. It is impossible to give more than a few titles of books suitable for pupils to read in their regular reading lessons, but the teacher may rely upon the following. Some of them may be a little difficult for pupils of this grade, but, if so, they can be read more thoroughly in the next grade.

King Arthur and His Court. Green. Ginn & Company. A pleasing book in simple style.

Andersen's *Fairy Tales*, first and second series, Ginn & Company; or, *Hans Andersen's Tales*, The Macmillan Company.

Stories from the Arabian Nights. Houghton, Mifflin & Company. This contains *Aladdin* and some of the other very familiar stories.

Hawthorne's *Wonderbook.* Houghton, Mifflin & Company and Educational Publishing Company. An excellent book which may be read also in fifth and sixth grades and is possibly better adapted to those grades.

Bird World. Stickney-Hoffman. Ginn & Company. An interesting group of simple descriptions which will assist in leading children to enjoy the observation of birds.

37. Fifth Grade. Continue reading in the fourth readers such selections as are adapted to the class. Several fourth readers should be used. The following are among the important things to be considered in fifth-grade work:

(1) Review of the work of the fourth grade.

(2) More extended study and drill in those topics which are treated on pages 40–54, Sections 12 to 21, inclusive.

(3) More extended study in the topics on pages 7–10, Sections 11 and 12, and introductory work in the topics on pages 30, 31, Sections 3 and 4.

(4) Allusions explained as they are met. (See pages 21, 22, Section 21.)

(5) Elementary work in reading poetry, for which suggestions may be obtained from pages 82–92.

(6) The explanation of the use of reference books. (See Volume III, page 241. See also *The Dictionary, and How to Use It*, in *Teacher's Guide.*)

(7) Supplementary reading:

Hiawatha. Longfellow. Houghton, Mifflin & Company; the Macmillan Company; Educational Publishing Company; University Publishing Company. Very well adapted for use in this grade as well as in the two succeeding grades.

Tanglewood Tales. Hawthorne. Houghton, Mifflin & Company.

Water Babies. Kingsley. Ginn & Company; Macmillan Company; Educational Publishing Company; Maynard, Merrill & Company. A very interesting story for school or home use. In the latter case it would probably be better for sixth grade pupils.

Squirrels and Other Fur Bearers. Burroughs. Houghton, Mifflin & Company. May be rather difficult.

38. Sixth Grade. The fourth readers may be continued in use in this grade, if the selections are adapted to the pupils.

(1) Many of the old selections with which the pupils are familiar will furnish material for detailed studies after the plans given.

(2) The reading may be largely supplemented from biographical, historical and geographical subjects, and should be made to contribute helpfully to the work in the other grades.

(3) Where many pupils do not understand how to study, the time of the reading class may occasionally be given to instruction in that subject. (See pages 54–57, Sections 23 and 24.) If these suggestions are properly carried out, the pupils will learn to become independent in their study, and their advancement will be marked in every subject where they use text-books.

(4) Work in grouping (see pages 10–15, Sections 13 and 14) and teaching figures of speech (see pages 16–21, Sections 15 to 20, inclusive).

(5) Studies of description (see pages 66, and 69–72, Sections 2 and 5).

(6) Supplementary Reading:

King of the Golden River. Ruskin. Ginn & Company; Macmillan Company; Houghton, Mifflin & Company; D. C. Heath & Company; Maynard, Merrill & Company. A charming story, full of excellent opportunities for study.

Gulliver's Travels. Swift. Houghton, Mifflin & Company; Ginn & Company; Educational Publishing Company, and others. Both boys and girls enjoy *Gulliver's Travels*, which, however, may prove a little difficult to some children in this grade.

The Sketch Book. Irving. Ginn & Company; Houghton, Mifflin & Company; American Book Company, and others. An excellent sixth-grade book which may be used profitably in the seventh grade. It contains *Rip Van Winkle* and several other stories.

The Courtship of Miles Standish. Longfellow. Houghton, Mifflin & Company. This poem may be read with equal interest in the seventh grade and perhaps should be placed there if the sixth grade class is at all backward.

The Children's Hour, *Paul Revere's Ride* and other poems. Longfellow. Houghton, Mifflin & Company.

How the Old Horse Won the Bet and the *Wonderful One Hoss Shay*, by Holmes — Houghton, Mifflin & Company — are good humorous selections for this grade. *The Song of Marion's Men, To a Waterfowl, The Fringed Gentian* and *The White-Footed Deer.* Bryant.

39. Seventh Grade. It may be that in some schools the use of a fifth reader is still continued, in which case that may be used in this grade and the eighth; but a much better plan is for the reading of the children to be entirely from complete masterpieces.

(1) Some of the books mentioned as adapted to the fifth and sixth grades may be used to advantage here, as well as the following:

The Christmas Carol. Dickens. Houghton, Mifflin & Company; Educational Publishing Company. and others.

Snow-Bound and *Songs of Labor.* Whittier. Houghton, Mifflin & Company. *Snow-Bound* is a delightful poem for American children and it may be studied to advantage in both the seventh and eighth grades It is one of those poems which do not wear out. There are so many things to be considered that the teacher may use it in any one of the three upper grades, and by varying the character of the studies find her pupils always interested, even if they have previously read it.

Hunting of the Deer. Warner. Houghton, Mifflin & Company. This book contains also the essay, *How I Killed the Bear*, and other humorous stories in which the sentiment is excellent.

Evangeline. Longfellow. Houghton, Mifflin & Company; University Publishing Company, and others. This book may also be used in the eighth or ninth grade.

Lays of Ancient Rome. Macaulay. Houghton, Mifflin & Company; Maynard, Merrill & Company; American Book Company, and others. While the names in these stirring ballads may be difficult at first, the children will enjoy reading the heroic stories.

Poor Richard's Almanac. Franklin. Houghton, Mifflin & Company. This book contains much that will be interesting, but it is not one to be relied upon exclusively.

(2) By the time the pupil reaches the end of the seventh grade he should have been introduced to all phases of work which are discussed in the earlier part of these lessons in reading; but the study of figures of speech and the structure of poetry should not have become technical or exhaustive. The study of the structure of poetry is apt to degenerate to pure formalism if carried on too extensively, and it may be better to leave any careful consideration of the details of that subject until the ninth grade; but in the seventh grade the study of phrases may be specialized and the pupils should have made many complete studies of character and its development, of plots in stories and of the beauties of essays and the various forms of poetry. They should have learned to distinguish between lyric, epic and dramatic poetry and know the peculiar excellence of each type.

40. Eighth Grade. (1) For study in the eighth grade the following masterpieces are suitable:

Lady of the Lake. Scott. Maynard, Merrill & Company; American Book Company; Macmillan Company, and others. This long poem furnishes an attractive study, but as it is somewhat difficult it will occupy considerable time unless the pupils are well advanced. It might be better to use this in the ninth grade.

Cricket on the Hearth. Dickens. Houghton, Mifflin & Company; Maynard, Merrill & Company. An excellent story that furnishes the finest of opportunities for study of plot, character, phrases and figures of speech.

Franklin's *Autobiography.* Ginn & Company; Houghton, Mifflin & Company, and others. An excellent book which all children should read, not only because of its literary style but because of the lessons it contains. It is equally adapted to the succeeding grade and may sometimes be used profitably in the seventh.

Rab and his Friends. Brown. Educational Publishing Company; D. C. Heath & Company, and others. Interesting stories of dogs that will be much appreciated by children of this grade.

Enoch Arden. Tennyson. Maynard. Merrill & Company; Houghton, Mifflin & Company, and others. This book may be read in the ninth grade, and by some schools it is used in the seventh.

Sohrab and Rustum. Arnold. American Book Company; Houghton, Mifflin & Company; Educational Publishing Company, and others. The style of this book is simple, but the Eastern imagery is sometimes a little puzzling to pupils and the book may perhaps be used to better advantage in the ninth grade.

Merchant of Venice. Shakespeare. American Book Company; Ginn & Company; Educational Publishing Company, and others. This is the best of Shakespeare's plays for this grade. The children will enjoy reading it and it may be read again in the next grade from a different point of view. One of the advantages of the use of great masterpieces is that they may be used in more than one grade.

Gettysburg Speech. Lincoln. Houghton, Mifflin & Company. This contains not only Lincoln's speech but also his inaugural addresses and an essay on Lincoln by Lowell. The Gettysburg speech is a simple type of a fine oration and the best for an introduction to the study of that form of literature.

(2) If this course has been followed out and the preliminary studies have been made as indicated in the earlier parts of these lessons, then the special literary work of this year might be the study of figures of speech, but it is probable that many other phases of reading work will need some attention. The tendency in the study

of masterpieces is to neglect oral reading. Pupils should be given abundant opportunities to read, and their reading should be criticized considerately by the teacher. If it becomes evident that the pupils need further instruction on the topics included in Chapter One of this volume, then that instruction must be given.

41. Ninth Grade. (1) Suitable masterpieces for this grade are the following:

The Vision of Sir Launfal. Lowell. Houghton, Mifflin & Company; Macmillan Company. This is one of the finest poems in the English language and affords opportunity for many studies. First it can be treated as a narrative poem and studied as a narrative should be studied; then as a poem with many fine lyrical qualities. There are very, very few things that give any greater variety of elegant figures of speech than this poem, and its rhyme and meter are so varied and so perfect that they will repay much study.

Ivanhoe. Scott. Macmillan Company; Ginn & Company, and others. A fine novel, which serves as an excellent introduction to other novels written by Sir Walter Scott.

Jean Valjean (from *Les Miserables*). Hugo. Ginn & Company; Educational Publishing Company.

Roger de Coverley. Addison. Macmillan Company; American Book Company, and others. A series of delightful essays which pupils of this grade will appreciate. They afford an excellent opportunity for the study of the character of an old English gentleman.

Marmion. Scott. Ginn & Company; Macmillan Company, and others. An interesting historical poem of stirring qualities. Will furnish work for several weeks.

The Great Debate. Hayne-Webster. Houghton, Mifflin & Company; Maynard, Merrill & Company. The type of a fine oration; somewhat difficult for pupils of this grade but valuable if the teacher can direct the work well.

Julius Caesar. Shakespeare. American Book Company; Educational Publishing Company; University Publishing Company, and others. One of the best of Shakespeare's plays for reading purposes.

(2) Studies of poetic structure may be completed as far as indicated in the early part of this lesson and may be continued even farther if the class is strong.

(3) Wherever students show weakness in interpretation or in oral reading they should be given elementary instruction in any or all phases of the work suggested for preceding grades.

(4) The pupils who have finished the ninth grade under favorable conditions should be able to read anything in the range of English literature at sight and should of their own initiative be able to study

and interpret, so far as their experiences permit, anything that presents itself to them.

42. Cautions. The masterpieces suggested for supplementary reading or as texts in the preceding sections must not be considered as the only ones which can be used. There are perhaps no others so well adapted to the purpose as those mentioned, but it may be that the school is supplied with others which can be used to advantage. See Volume Three, Chapter IX. *Books and Libraries.*

To purchase the masterpieces mentioned will not cost the individual pupil much more than a single reader would cost, if cheap editions are obtained from such firms as those whose names are mentioned.

Teachers should remember that it is never wise to buy any but school editions of these masterpieces unless it is known that all parts of the masterpieces are adapted to school reading. As a matter of fact, Shakespeare's plays, *Gulliver's Travels, The Arabian Nights* and similar books are not fit for school use except in the modified school editions. The teacher who desires to purchase books of this type should write to one of the reputable school-book publishing houses and should take the edition it recommends.

43. Children's Books. We have not space here for long lists of books for home reading, but the teacher will have no difficulty in obtaining information on this subject. Library circulars are issued by the state superintendent in most states, and these classify the books in a practical and helpful way.

Two books, otherwise helpful to teachers of reading, may be mentioned in this connection:

Fingerposts to Children's Reading. Walter Taylor Field. 224 pages and Appendix. A valuable little book with several helpful essays. Contains lists of books for home and class reading and for public and Sunday-school libraries.

Special Methods in the Reading of Complete English Classics in the Grades of the Common School. McMurry. 246 pages. The Macmillan Company. Valuable essays on methods, that assume, however, some knowledge on the part of the teacher. Lists of books giving publishers, for each grade from the fourth to the eighth inclusive. Lists for regular reading; for supplementary and reference work, and lists of books for teachers. In practical use the books may be found rather difficult for the grades indicated.

44. Teachers' Books. Much of inspiration and direct assistance will be found by the teacher of reading in the following books·

How to Teach Reading in the Public Schools. S. H. Clark. Scott, Foresman & Company, Chicago.

Essentials of Teaching Reading. Sherman & Reed. The University Publishing Company, Lincoln, Neb.

Reading in Public Schools. Briggs & Coffman. Row, Peterson & Company, Chicago.

The Mastery of Books. Koopman. American Book Company.

Elements of Literary Criticism. Charles F. Johnson. 228 pages. Harper and Brothers. An interesting book which, if carefully read, will show the earnest teacher what are the real elements of an author's power and how she may come to understand them.

Talks on Teaching Literature. Arlo Bates. 245 pages. Houghton, Mifflin & Company. The substance of a series of lectures given at the summer school of the University of Illinois. While not always adapted to work of the grades, the book concerns things which teachers of reading ought to know and is itself a piece of good literature.

TEST QUESTIONS

1 and 2. Prepare a series of questions designed to make the following description from *The Wonderful One-Hoss Shay* clear to a class of sixth grade pupils:

> So the Deacon inquired of the village folk
> Where he could find the strongest oak,
> That couldn't be split nor bent nor broke,—
> That was for spokes and floor and sills;
> He sent for lancewood to make the thills;
> The crossbars were ash, from the straightest trees,
> The panels of whitewood, that cuts like cheese,
> But lasts like iron for things like these;
> The hubs of logs from the "Settler's ellum,"—
> Last of its timber,—they couldn't sell 'em,
> Never an axe had seen their chips,
> And the wedges flew from between their lips,
> Their blunt ends frizzled like celery-tips;

Step and prop-iron, bolt and screw,
Spring, tire, axle, and linchpin too,
Steel of the finest, bright and blue;
Thoroughbrace bison-skin, thick and wide;
Boot, top, dasher, from tough old hide
Found in the pit when the tanner died.
That was the way he "put her through."
"There!" said the Deacon, "naow she'll dew!"

3. Give in about one hundred words the plot of one of the following stories: *The Legend of Sleepy Hollow*, *Enoch Arden*, *Evangeline*, *The Courtship of Miles Standish*, *The Ugly Duckling*, *The King of the Golden River*. (If you have read none of these stories and cannot easily procure one of them, give the plot of some newspaper or magazine story which you can send in with your manuscript.)

4. Discuss the character of the hero or principal person in the story whose plot you gave in answer to Question 3.

5. Discuss (a) the value of fiction to pupils of the seventh and eighth grades; (b) its dangers.

6. (a) In what respect does poetry differ from prose? (b) Give at least three reasons why pupils of the seventh and eighth grades should read and study poetry.

7. Find and copy five memory gems which you think suitable for a sixth-grade reading class.

8. Explain the meaning of the following phrases from *The Uprising* (Section 34), and comment on the aptness, beauty or force of each:

(a) breathless choir.
(b) ear of dusty death.
(c) jubilant iron tongue.
(d) In this the dawn of Freedom's day
There is a time to fight and pray.
(e) All could not read the lesson taught
In that republic of the dead.

9. Sketch the appearance and character of Berkeley in *The Uprising*.

10. What are the advantages in studying complete masterpieces instead of collections of extracts in the seventh and eighth grades?

45. Type Study on Cinderella

THE STORY OF CINDERELLA

Adapted from Charles Perrault

There was once a worthy gentleman who took for his second wife the proudest and most disagreeable lady in the whole country. She had two daughters by a previous marriage, exactly like herself in all things. The gentleman also had one little girl, who resembled her dead mother, the best woman in all the world. Scarcely had the second marriage taken place, when the stepmother became jealous of the good qualities of the little girl who was so great a contrast to her own two daughters. She gave her all the hard work of the house. She made her wash the floors and staircases, dust the bedrooms, and clean the grates. While her sisters occupied carpeted chambers, hung with mirrors in which they could see themselves from head to foot, this poor little girl was sent to sleep in an attic, on an old straw mattress, with only one chair, and not a looking-glass in the room.

She suffered all in silence, not daring to complain to her father, who was entirely ruled by his new wife. When her daily work was done, she used to sit down in the chimney-corner among the ashes and cinders; and so her two sisters gave her the nickname of *Cinderella*. But Cinderella, however shabbily clad, was handsomer than they were, with all their fine clothes.

It happened that the king's son gave a number of balls. All the ladies and gentlemen of the city were asked, and among the rest the two elder sisters. They were very proud and happy, and spent their whole time in choosing what they should wear. This was a new trouble to Cinderella, who had to get up their fine linen and laces, and who never could please them, however much she endeavored to do so. They talked of nothing but their clothes.

"I," said the elder, "shall wear my velvet gown and my trimmings of English lace."

"And I," added the younger, "will have but my ordinary silk petticoat; but I shall adorn it with an upper skirt of flowered brocade, and shall put on my diamond tiara, which is a great deal finer than anything of yours."

Here the elder sister grew angry, and the dispute began to run so high, that Cinderella, who was known to have excellent taste, was called upon to decide between them. She gave them the best advice she could, and gently and meekly offered to dress them herself, and especially to arrange their hair. The important evening came, and she used all her skill to adorn the two young ladies. While she was combing out the elder's hair, this ill-natured girl said sharply, "Cinderella, do you not wish you were going to the ball?"

CINDERELLA AND THE FAIRY GODMOTHER

"Ah, my lady" (they obliged her always to say "my lady"), "you are only mocking me. It is not my good luck to have any such pleasure."

"You are right: people would only laugh to see a little cinder-wench at a ball."

Any other than Cinderella would have dressed the hair all awry; but she was good, and dressed it perfectly even and smooth, and as prettily as she could.

The sisters had scarcely eaten for two days, and had broken a dozen stay-laces a day, in trying to make themselves slender; but to-night they broke a dozen more, and lost their tempers over and over again before they had completed their dressing. When at last the happy moment arrived, Cinderella followed them to the coach. After it had whirled them away, she sat down by the kitchen fire, and cried.

Immediately her godmother, who was a fairy, appeared beside her. "What are you crying for, my little maid?"

"Oh, I wish—I wish—" Her sobs stopped her.

"You wish to go to the ball, don't you?"

Cinderella nodded.

"Well, then, be a good girl, and you shall go. First run into the garden, and bring me the largest pumpkin you can find."

Cinderella did not see what this had to do with going to the ball, but, being obedient and obliging, she went. Her godmother took the pumpkin, and, having scooped out all its inside, struck it with her wand. It became a splendid gilt coach, lined with rose-colored satin!

"Now bring me the mouse-trap out of the pantry, my dear."

Cinderella brought it. It contained six of the fattest, sleekest mice. The fairy lifted up the wire door, and as each mouse ran out she struck it and changed it into a beautiful black horse.

"But what shall I do for your coachman, Cinderella?"

Cinderella suggested that she had seen a large black rat in the rat-trap, and he might do for want of better.

"You are right. Go and look again for him."

He was found; and the fairy made him into a most respectable coachman, with the finest whiskers imaginable. She afterwards took six lizards from behind the pumpkin-bed, and changed them into six footmen, all in splendid livery. They immediately jumped up behind the carriage, as if they had been footmen all their days. "Well, Cinderella, now you can go to the ball."

"What, in these clothes?" said Cinderella sadly, looking down at her ragged dress.

Her godmother laughed, and touched her also with the wand. At once her wretched threadbare jacket became stiff with gold and sparkling with jewels, her woolen petticoat lengthened into a gown of sweeping satin, from underneath which peeped out her little feet covered with silk stockings and the prettiest glass slippers in the world. "Now, Cinderella, depart; but remember, if you stay one instant after midnight, your carriage will become a pumpkin, your coachman a rat, your horses mice, and your footmen lizards; while you yourself will be the little cinder-wench you were an hour ago."

Cinderella promised readily, her heart was so full of joy.

Cinderella arrived at the palace. The king's son, whom some one, probably the fairy godmother, had told to await the coming of an uninvited princess that nobody knew, was standing at the entrance, ready to receive her. He offered her his hand, and led her with the utmost courtesy through the assembled guests, who stood aside to let her pass, whispering to one another, "Oh, how beautiful she is!" It might have turned the head of any one but poor Cinderella, who was so used to being despised that she took it all as if it were something happening in a dream.

Her triumph was complete. Even the old king said to the queen, that never since her majesty's young days had he seen so charming and elegant a person. All the court ladies scanned her eagerly, clothes and all, determining to have theirs made next day of exactly the same pattern. The king's son himself led her out to dance, and she danced so gracefully that he admired her more and more. Indeed, at supper, which was fortunately early, his admiration quite took away his appetite. Cinderella, with an involuntary shyness, sought out her sisters. She placed herself beside them, and offered them all sorts of civil attentions, which, coming as they supposed from a stranger, and so magnificent a lady, almost overwhelmed them with delight.

While she was talking with them she heard the clock strike a quarter to twelve; so, bidding a graceful adieu to the royal family, she re-entered her carriage, escorted tenderly by the king's son, and arrived safely at her own door. There she found her godmother, who smiled approval, and of whom she asked leave to go to a second ball, the following night, to which the queen had earnestly invited her.

While she was talking, the two sisters were heard knocking at the gate. The fairy godmother vanished, leaving Cinderella sitting in the chimney-corner, rubbing her eyes, and pretending to be very sleepy.

"Ah!" cried the eldest sister spitefully, "it has been the most delightful ball; and there was present the most beautiful princess I ever saw, and she was so exceedingly polite to us both."

"Was she?" said Cinderella indifferently; "and who might she be?"

"Nobody knows, though everybody would give their eyes to know, especially the king's son."

"Indeed!" replied Cinderella, a little more interested; "I should like to see her. Miss Javotte"—that was the elder sister's name—"will you not let me go to-morrow, and lend me your yellow gown that you wear on Sundays?"

"What, lend my yellow gown to a cinder-wench! I am not so mad as that." Cinderella did not complain at this refusal, for if her sister had lent her the gown she would have been puzzled what to do.

The next night came; and the two young ladies, richly dressed, went to the ball. Cinderella, more splendidly attired and more beautiful than ever, followed them shortly after. "Now, remember twelve o'clock," was her godmother's parting speech; and she thought she certainly should. But the prince's attentions to her were greater even than the first evening; and, in the delight of listening to his pleasant conversation, time slipped by unnoticed. While she was sitting beside him in a lovely alcove, she heard a clock strike the first stroke of twelve. She started up, and fled away as lightly as a deer.

Amazed, the prince followed, but could not catch her. Indeed he missed his lovely princess altogether, and only saw running out of the palace-doors a little dirty girl, whom he had never beheld before, and of whom he certainly would never have taken the least notice. Cinderella arrived at home breathless and weary, ragged and cold, without carriage, or footman, or coachman. All that was left of her past magnificence was one of her little glass slippers. The other she had dropped in the ball-room as she ran away.

When the two sisters returned they were full of this strange adventure; how the beautiful lady had appeared at the ball more beautiful than ever, and enchanted every one who looked at her; how, as the clock was striking twelve, she had suddenly risen up and fled through the ball-room, disappearing, no one knew how or where, and dropping one of her glass slippers behind her in her flight; how the king's son had remained inconsolable until he chanced to pick up the little glass slipper, which he carried away in his pocket, and was seen to take out continually, and look at affectionately. In fact, all the court and royal family were convinced that he was deeply in love with the wearer of the little glass slipper.

Cinderella listened in silence, turning her face to the kitchen fire. Perhaps it was that which made her look so rosy; but nobody ever noticed or admired her at home, so it did not signify, and next morning she went to her weary work again just as before.

A few days after, the whole city was attracted by the sight of the prince, preceded by a herald, who went about with a little glass slipper in his hand, proclaiming that the king's son ordered this to be fitted on the foot of every lady in the kingdom, and that he wished to marry the lady whom it fitted best, or to whom it and the fellow-slipper belonged. Princesses, duchesses, countesses, and gentlewomen, all tried it on; but, being a fairy slipper, it fitted nobody. Besides, nobody could produce its fellow-slipper, which lay all the time safely in the pocket of Cinderella's old linsey gown.

At last the herald and the prince came to the house of the two sisters. They well knew that neither of themselves was the beautiful lady. Still they made every attempt to get their clumsy feet into the glass slipper; but in vain.

"Let me try it on," said Cinderella, from the chimney-corner.

"What, you?" cried the others, bursting into shouts of laughter; but Cinderella only smiled, and held out her hand. But her sisters could not prevent her, since the command was that every young maiden in the city should try on the slipper, in order that no chance might be left untried. For the prince was nearly breaking his heart; and his father and mother were afraid that, though a prince, he would actually die for love of the beautiful unknown lady.

So the herald bade Cinderella sit down on a three-legged stool in the kitchen, and himself put the slipper on her pretty little foot, which it fitted exactly. She then drew from her pocket the fellow-slipper, which she also put on, and stood up—for with the touch of the magic shoes all her dress was changed likewise—no longer the poor cinder-wench, but the beautiful lady whom the king's son loved.

Her sisters recognized her at once. Filled with astonishment and alarm, they threw themselves at her feet, begging her pardon for all their former unkindness. She raised and embraced them, telling them she forgave them with all her heart, and only hoped they would love her always. Then she departed with the herald to the king's palace, and told her whole story to his majesty and the royal family, who were not in the least surprised, for everybody believed in fairies, and everybody longed to have a fairy godmother.

As for the young prince, he thought her more lovely and lovable than ever, and insisted upon marrying her immediately. Cinderella never went home again; but she sent for her two sisters to the palace, and with the consent of all parties married them shortly after to two rich gentlemen of the court.

1. The story of Cinderella is a favorite fairy tale in many countries. It is a story of striking contrasts, both in the characters and in the conditions under which they act.

The court life of kings and princes offers a brilliant contrast to the dirty little cinder girl, and the fairy wand that can bridge the chasm between these in a twinkling and lift the unjustly treated maiden to the honors of a beautiful princess is a source of wonder and delight. This fairy tale, like many others, takes the part of the weak and meanly treated and rejoices in seeing kindness brought to its reward. The moral truth, which holds the central place in the story, is plain and simple.

Cinderella, even though treated with unkindness and scorn, is still gentle and kind, and her virtue shines even in her homely and mean dress and surroundings. It is only right that the fairy godmother should step in and restore the balance.

2. APPRECIATING AND JUDGING CHARACTER. One needs to appreciate and enjoy the story in its entire setting in order to deal with it fitly in a class.

The proud stepmother and her ambitious, selfish daughters are true to their nature and instincts and are clearly mean and heartless in their treatment of their adopted sister. Children can fully appreciate the hearty selfishness of the older sisters and condemn them for it. On the other hand, Cinderella wins their approval by her gentleness and willingness to help.

The judgments that children pass on these characters and the feelings of approval and disapproval they unconsciously develop are the beginnings of moral training of the right sort. A story like this offers a chance to produce right dispositions in children. In thought and feeling they develop strong attitudes of mind and become tinged with better human sympathies. It is no light matter to give to children's minds the bent which the best stories naturally produce in them. The spirit of such stories can be carried over into the games and behavior of the children to one another.

3. THE WONDER SIDE OF THE STORY. The wonder side of the story will hardly trouble the children. They would be troubled, however, if some fairy did not step in at the right moment and see justice done. The imagination of little folk is quite equal to the demands of any good fairy

tale, only the moral demands of truth and justice must not be sacrificed. So long as the characters behave according to natural impulses and can be easily estimated at their true value as good or bad, the fairy tale can do no harm on the moral side. If we once catch the beautiful pure spirit of the fairy tale, even as adults we never can outgrow it. In the various forms of poetry and tale it keeps us fresh and young.

4. New and Difficult Words. Supposing that children in about the fourth grade are advanced enough to read the story as here presented, certain difficulties are to be met and overcome in the classroom reading and discussion of the story.

Such a story should be difficult enough to put obstacles in the way of the children, new words and phrases, the interpretation of somewhat longer and more complicated sentences, and the ability to express fittingly the ideas couched in these partly new forms.

Reading lessons are uphill performances, problems calling for mental strain and effort. In the assignment of the lesson let us look at some of the new words and phrases that are coming up, e. g., "proudest and most disagreeable," "previous marriage," "jealous," "occupied carpeted chambers," "chimney-corner," "nickname," "shabbily," "endeavored," "trimmings," "ordinary silk petticoat," "flowered brocade," "diamond tiara." Here are a dozen words or phrases which may make more or less difficulty to all members of the class. How deal with them?

There are several ways of approaching these new words. But in any case the children need to be stimulated to attack the difficulties in their own strength. Sometimes it may be well for the teacher to read a whole paragraph in a spirited way and then ask the children to point out the words that are difficult for them. The children should form the habit of combining the elementary sounds in the word so as to pronounce it without help. Most words are pronounced phonetically, that is, as they are spelled. It is not a good habit in the teacher to pronounce new words for the children as soon as they appear, but throw the burden back upon them to think out the probable pronunciation. This calls for special drills in phonics.

This is one good way to keep class attention, by calling quickly upon various members of the class for new words. Concert and single drill upon a list of new words at the beginning of a lesson, or later, is often needed. Sharp, quick drills for a few minutes each day are a good means of thorough review and mastery.

The meanings of these new and unusual words call also for explanation. "Jealous," in this case, a dislike for Cinderella because she was more agreeable and better-tempered than her own children; "carpeted chambers," rooms furnished with choice rugs and floors in contrast to the plain wooden floor of the kitchen; "shabbily clad," in ragged or greasy clothes; "brocade," made of silk and ornamented with heavier silk or with gold or silver threads. Show some brocaded silk. "Tiara," a fine headdress, and, with kings or princes, encircled above with a crown.

5. QUESTIONS TO SECURE MEANING AND EMPHASIS. One of the main problems in children's reading is to secure an animated, intelligent expression of the thought and feeling of the piece.

This can be got at directly and indirectly in several ways. Not infrequently the teacher should read a part with special skill. Most of us need to drill ourselves and practice in order to do this effectively. This kind of illustrative reading by the teacher is not for the purpose of mere imitation by the pupils, but to suggest the spirit and style of the reading and to arouse interest.

Another mode of approach is to ask questions to bring out the emphatic word or words in a sentence, so as to break up monotony and sing-song. In the first sentence of this selection, e. g., tell what kind of a woman the stepmother was. How may we speak these three words ("proudest" and "most disagreeable") so as to show how this lady acted?

In the sentence beginning "While her sisters occupied carpeted chambers," show by reading the contrast in the rooms of the three sisters. Certain words stand out in distinct opposition.

Another mode of securing lively emphasis and expression is to dramatize the dialogue parts, and assign the parts to different pupils. The Cinderella story offers several good chances for dialogue. Closely related to this is impersonation. Let the reader take on the character of the mean sister, or of the godmother. or of Cinderella. A study of the picture in the story will help to stimulate the imagination. In a few cases it is well to costume the children for these plays and make the work semi-public and call in the parents.

6. COMPARISON WITH OTHER TALES IN WHICH THE WONDER ELEMENT AND THE PORTRAYAL OF CHARACTER APPEAR. The stories of *Little One-Eye*, of *Hansel and Grethel*, *The Ugly Duckling*, and the *Elves and the Shoemaker* illustrate the same spirit of kindness for the weak and helpless, and also show how the fairy tale provides a happy escape for those who are unjustly treated. Many fairy stories have this deep undertone of kindness and sympathy, and it is worthy of frequent repetition and emphasis in training children.

Later, stories for children a little older will develop the same thought and feeling. as *The King of the Golden River*, *The Miraculous Pitcher* and many fairy stories and myths. Compare Cinderella, for example, with Little Two Eyes, and with Gluck in *The King of the Golden River*, and notice how strikingly similar the stories are in meaning and spirit.

Further Suggestions as to Method

1. See that lively and interesting thought is made the basis for natural and vigorous expression.

2. As a preliminary exercise. occasional oral narration of fairy tales, or reading of them in a spirited manner, with reproduction by the children, will introduce them best to the fairy lore.

3. Let children pass judgment upon the truth, worth and beauty of what they read.

4. Appeal to the imagination of children by concrete illustration and picturing-out of scenes. Gestures and blackboard sketches as well as pictures will help to give vivid ideas.

5. Show children how to articulate distinctly and be careful by your speech to give constant suggestion as to clearness.

6. Let children help themselves as much as possible, in working out the pronunciation of new words, in explaining and giving right expression and meaning.

46. Type Study on "The Barefoot Boy"

INTRODUCTION. 1. The poet Whittier is looking back lovingly upon his own childhood, when he was a free boy in the midst of nature, unembarrassed by the cramping restraints, in business and society, of the mature man. The boy was happier than he knew in his freedom. He was not even a democrat with the limitations of democracy. He was a monarch, one who commanded the world about him and found all things obedient to his desires.

Whittier had been himself such a free American boy. Turned loose in nature, his spirit expanded and frolicked in the joy of living in the midst of birds and bees, orchards and ponds. Whittier almost envies the free life of his childhood. To the end of his days he likes to get back into this realm of freedom to enjoy the freshness and wildness of nature in forest and by the stream. This note of joy in freedom is the fundamental note of the poem. Many of Whittier's poems are full of this love of nature and outdoor freedom. He loved the seaside and the mountains, the deep woods, the brooks and wild creatures.

2. The appeal is open to children's experiences of like nature. How many of the boys and girls have had experiences similar to Whittier's?

It will be interesting to have the children note that they have had most of the enjoyments that Whittier mentions. Perhaps if they were to describe their experiences, they could write a poem much like his. Make a list of the things Whittier mentions that you have noticed. Make some rhymes about them.

It may be worth while to mention quite a number of interesting things boys enjoy that Whittier forgot to mention, as swimming, coasting, flying kites, watching wood-peckers, the storms and winds, etc. This subject is rich in possibilities. Farm and country life, with horses and cattle and other animals, wild and domestic, gives a rich variety of childhood events worth mentioning.

UNUSUAL WORDS AND FIGURES OF SPEECH. In the assignment of the lesson, the teacher looks forward to note unusual and peculiar words and expressions which may be pronounced and concretely interpreted, as "architectural plans," "eschewing books," "regal tent," "prison cells of pride," "habitude of the tenants of the wood," "ceaseless moil," "treacherous sands."

Compare a house plan or blue print with the structure of a hornet's nest ("architectural"). "Eschewing books" and tasks is a familiar idea to some children, though the phrase be new. "Apples of Hesperides" should call up the Greek story. "Regal" suggests synonyms, as *royal*, *kingly*. The figure is a gorgeous one to arouse imagination. "Prison cells" in contrast to wide freedom to roam. "Ceaseless moil," give examples of monotonous work in factories and in dish-washing. "Treacherous," a very strong word. Basis is *traitor*, *cheat*.

. Closely connected with these new words are the figures of speech which are so valuable in awakening imagination in children, as the phrase "regal tent" just referred to. Also, "Kissed by strawberries on the hill"; "Health that mocks at doctor's rules": Health is thought of as a person who could make fun of the doctor. "Nature answers all he asks": Nature is here thought of as a school teacher who answers questions instead of asking them. How would you like such a teacher? What does Whittier think about it? "Whispering at the garden wall": Who is listening to the whispers and the talking? Where have you listened to a brook? "The pied frogs' orchestra": How many pieces in an orchestra? How does the frogs' orchestra represent different instruments? "Lit the fly his lamp of fire": Recall summer evenings where the lightning bugs come out. "Mills of toil": Bring to mind factories and shops.

The Barefoot Boy

Blessings on thee, little man,
Barefoot boy, with cheek of tan!
With thy turned-up pantaloons,
And thy merry whistled tunes;
With thy red lip, redder still
Kissed by strawberries on the hill;
With the sunshine on thy face,
Through thy torn brim's jaunty grace:
From my heart I give thee joy!
I was once a barefoot boy.

Prince thou art—the grown-up man
Only is republican.
Let the million-dollared ride!
Barefoot, trudging at his side,
Thou hast more than he can buy,
In the reach of ear and eye—
Outward sunshine, inward joy:
Blessings on thee, barefoot boy.

Oh, for boyhood's painless play;
Sleep that wakes in laughing day;
Health that mocks at doctor's rules;
Knowledge never learned of schools,
Of the wild bee's morning chase,
Of the wild-flower's time and place,
Flight of fowl and habitude
Of the tenants of the wood;
How the tortoise bears his shell;
How the woodchuck digs his cell,
And the ground-mole sinks his well;
How the robin feeds her young;
How the oriole's nest is hung;
Where the whitest lilies blow;
Where the freshest berries grow;
Where the ground-nut trails its vine;
Where the wood-grape's clusters shine:
Of the black wasp's cunning way—
Mason of his walls of clay—

WITH THE SUNSHINE ON THY FACE,
THROUGH THY TORN BRIM'S JAUNTY GRACE.

And the architectural plans
Of gray hornet artisans!
For, eschewing books and tasks,
Nature answers all he asks;
Hand in hand with her he walks,
Face to face with her he talks,
Part and parcel of her joy—
Blessings on the barefoot boy!

Oh, for boyhood's time of June,
Crowding years in one brief noon,
When all things I heard or saw,
Me, their master, waited for.

I was rich in flowers and trees,
Humming-birds and honey-bees;
For my sake the squirrel played;
Plied the snouted mole his spade;
For my taste the blackberry cone
Purpled over hedge and stone;
Laughed the brook for my delight
Through the day and through the night,
Whispering at the garden wall,
Talked with me from fall to fall;
Mine the sand-rimmed pickerel pond;
Mine the walnut slopes beyond;
Mine, on bending orchard trees,
Apples of Hesperides!
Still, as my horizon grew
Larger grew my riches, too;
All the world I saw or knew,
Seemed a complex Chinese toy,
Fashioned for a barefoot boy!

Oh, for festal dainties spread,
Like my bowl of milk and bread;
Pewter spoon and bowl of wood,
On the door-stone, gray and rude!
O'er me, like a regal tent,
Cloudy-ribbed, the sunset bent,
Purple-curtained, fringed with gold,
Looped in many a wind-swung fold;
While for music came the play
Of the pied frogs' orchestra;
And to light the noisy choir,
Lit the fly his lamp of fire.
I was monarch: pomp and joy
Waited on the barefoot boy!

Cheerily, then, my little man,
Live and laugh, as boyhood can!
Though the flinty slopes be hard,
Stubble-speared the new mown sward,
Every morn shall lead thee through
Fresh baptisms of the dew;
Every evening from thy feet
Shall the cool wind kiss the heat:
All too soon these feet must hide
In the prison cells of pride,

Lose the freedom of the sod,
Like a colt's for work be shod,
Made to tread the mills of toil,
Up and down in ceaseless moil:
Happy if their track be found
Never on forbidden ground;
Happy if they sink not in
Quick and treacherous sands of sin.
Ah! That thou couldst know thy joy
Ere it passes, barefoot boy!

THE RHYMES IN "BAREFOOT BOY." Poetry is musical and easier to remember because it rhymes. Recall some of the rhymes that you have learned without effort, as

Blessings on thee, little *man*,
Barefoot boy with cheek of *tan*.

Outward sunshine, inward joy,
Blessings on thee, barefoot boy.

Notice that the rhyming words are spelled differently, though sounded alike, as "buy" and "eye," "pantaloons" and "tunes," "played" and "spade," "choir" and "fire." Notice also quite a number of faulty rhymes in this poem, e.g.,

When all things I heard or *saw*,
Me, their master, waited *for*.

While for music came the *play*
Of the pied frog's orches*tra*.

Though the flinty slopes be *hard*.
Stubble-speared the new mown *sward*.

Also such rhymes as "wood" and "rude," "habitude" and "wood." All these cases show that the poet had some difficulty in constructing his rhymes. Other of his rhymes seem very simple, easy and apt.

HARDSHIPS OF THE BAREFOOT BOY. Whittier suggests that some of the boy's experiences are severe and painful, as when he says,

Though the flinty slopes be hard,
Stubble-speared the new mown sward.

When the boy stubbed his toe, or stepped on a thorn, or when the morning dew was stinging cold, or his fingers were nipped with frost, the other side of the farmer boy's life comes into view. The children may name other things that go to show that even the barefoot boy can enjoy a good pair of shoes and find them comfortable.

OTHER WRITERS WHOSE POEMS OR STORIES DEAL WITH BOYHOOD. Whittier's *Snowbound* touches the same nature note when speaking of his uncle:

Our uncle, innocent of books,
Was rich in lore of fields and brooks.

Many of his poems show this love of nature.

Other writers have written of boyhood's joys, as James Whitcomb Riley's *Old Swimmin' Hole*, Thomas Bailey Aldrich's *Story of a Bad Boy*, Mark Twain's *Tom Sawyer*. Charles Dudley Warner's *Being a Boy*, like Whittier's *Barefoot Boy*, tells of the country boy's experiences.

Benjamin Franklin, in his *Autobiography*, tells of interesting episodes of his boyhood. The first part of *Hiawatha* is a story of childhood as the Indian boy knew it.

Emerson, Lowell and Thoreau were also lovers of this freedom in wild nature, and many of their poems and stories give expression to this delight in nature surroundings.

SUGGESTIONS IN READING. A proper reading and discussion of such a poem as *The Barefoot Boy* give a chance to review and call up a variety of early boyhood experiences and pleasures of home, and picnic excursions to woods for nutting, gathering flowers, fishing, swimming, climbing trees, boating, camping, etc.

A wholesome interest can be awakened in the home and surroundings of Whittier as a boy, and this compared with our home and neighborhood.

47. Type Studies in Reading.

The following type studies were prepared by George E. Martin, superintendent of the Training School, State Normal School, Kearney, Nebraska; joint author of Searson & Martin School Readers.

THE BUILDING OF THE SHIP

In reading the following poem, we shall enjoy it greatly if our fancy is allowed to apply the beautiful figures of speech to more than one possible phase of life. It is said that Mr. Longfellow desired to write a poem that should picture the life of man when he undertook to write this. Before it was finished, his father became very ill and died in Portland, Maine. This event interrupted the work on the poem and caused the poet to spend some time in the city by the sea. These circumstances combined with the stirring political discussions of the time, 1849, somewhat changed the central theme of the poem and gave it such a patriotic content that it became one of the foremost of American patriotic poems. When it was finally done, the author was not satisfied with it. Despairing of doing better, he sent it to the publishers as the leading piece in a volume called, *The Seaside and the Fireside.* It is said that the material was in the presses and the latter ready to start when Mr. Longfellow telegraphed for delay until he could substitute the present closing stanza for the original and unsatisfactory one that had given him so much trouble.

When it appeared, the poem attracted immediate attention. Discriminating readers were quick to detect the charming style and the apt figures of speech. The sublime closing stanza touched deeply the patriotic emotions of all Americans. Mrs. Fanny Kemble Butler appeared before a great Boston audience and, quoting from Mr. Longfellow's diary, "trembling, palpitating, and weeping and giving each word its true emphasis," read the whole poem, declaring that she hoped to be able to make every word audible to the great multitude.

On one occasion, Mr. Noah Brooks visited Abraham Lincoln and found him much interested in this poem. Mr. Brooks repeated from memory the entire poem. Mr. Lincoln listened and under the spell of the closing lines, his cheeks became wet with tears. He said, "It is a wonderful gift to be able to move men like that."

Much of the teaching of the poem and many of its figures of speech admit of an interpretation along the lines of the original scheme of the work, but it will be found that the direct and obvious allusions to the building of the nation are many and that the thread of the story applies to the history of the United States alone.

THE BUILDING OF THE SHIP

Build me straight, O worthy Master!
  Stanch and strong, a goodly vessel,
That shall laugh at all disaster,
  And with wave and whirlwind wrestle!"

The merchant's word
Delighted the Master heard;
For his heart was in his work, and the heart
Giveth grace unto every Art.
A quiet smile played round his lips,
As the eddies and dimples of the tide
Play round the bows of ships,
That steadily at anchor ride.
And with a voice that was full of glee,
He answered, "Ere long we will launch
A vessel as goodly, and strong, and stanch,
As ever weathered a wintry sea!"
And first with nicest skill and art,
Perfect and finished in every part,
A little model the Master wrought,
Which should be to the larger plan
What the child is to the man,
Its counterpart in miniature;
That with a hand more swift and sure
The greater labor might be brought

To answer to his inward thought.
And as he labored, his mind ran o'er
The various ships that were built of yore,
And above them all, and strangest of all
Towered the Great Harry, crank and tall,
Whose picture was hanging on the wall,
With bows and stern raised high in air,
And balconies hanging here and there,
And signal lanterns and flags afloat,
And eight round towers, like those that frown
From some old castle, looking down
Upon the drawbridge and the moat.
And he said with a smile, "Our ship, I wis,
Shall be of another form than this!"
It was of another form, indeed;
Built for freight, and yet for speed,
A beautiful and gallant craft;
Broad in the beam, that the stress of the blast,
Pressing down upon sail and mast,
Might not the sharp bows overwhelm;
Broad in the beam, but sloping aft
With graceful curve and slow degrees,
That she might be docile to the helm,
And that the currents of parted seas,
Closing behind with mighty force,
Might aid and not impede her course.

In the shipyard stood the Master,
With the model of the vessel,
That should laugh at all disaster,
And with wave and whirlwind wrestle!

Covering many a rood of ground,
Lay the timber piled around;
Timber of chestnut, and elm, and oak,
And scattered here and there, with these,
The knarred and crooked cedar knees;
Brought from regions far away,
From Pascagoula's sunny bay,
And the banks of the roaring Roanoke!
Ah! what a wondrous thing it is
To note how many wheels of toil
One thought, one word, can set in motion!

There's not a ship that sails the ocean,
But every climate, every soil,
Must bring its tribute, great or small,
And help to build the wooden wall!

The sun was rising o'er the sea,
And long the level shadows lay,
As if they, too, the beams would be
Of some great, airy argosy,
Framed and launched in a single day.
That silent architect, the sun,
Had hewn and laid them every one,
Ere the work of man was yet begun.
Beside the Master, when he spoke,
A youth, against an anchor leaning,
Listened, to catch his slightest meaning.
Only the long waves, as they broke
In ripples on the pebbly beach,
Interrupted the old man's speech.

Beautiful they were, in sooth,
The old man and the fiery youth!
The old man in whose busy brain
Many a ship that sailed the main
Was modelled o'er and o'er again;
The fiery youth, who was to be
The heir of his dexterity,
The heir of his house, and his daughter's hand,
When he had built and launched from land
What the elder head had planned.
"Thus," said he, "will we build this ship!
Lay square the blocks upon the slip,
And follow well this plan of mine.
Choose the timbers with greatest care;
Of all that is unsound beware;
For only what is sound and strong
To this vessel shall belong.
Cedar of Maine and Georgia pine
Here together shall combine.
A goodly frame, and a goodly fame,
And the UNION be her name!
For the day that gives her to the sea
Shall give my daughter unto thee!"

The Master's word
Enraptured the young man heard;
And as he turned his face aside,
With a look of joy and a thrill of pride
Standing before
Her father's door,
He saw the form of his promised bride.
The sun shone on her golden hair,
And her cheek was glowing fresh and fair,
With the breath of morn and the soft sea air.
Like a beauteous barge was she,
Still at rest on the sandy beach,
Just beyond the billow's reach;
But he
Was the restless, seething, stormy sea!
Ah, how skilful grows the hand
That obeyeth Love's command!
It is the heart, and not the brain,
That to the highest doth attain,
And he who followeth Love's behest
Far excelleth all the rest!

Thus with the rising of the sun
Was the noble task begun,
And soon throughout the shipyard's bounds
Were heard the intermingled sounds
Of axes and of mallets, plied
With vigorous arms on every side;
Plied so deftly and so well,
That, ere the shadows of evening fell,
The keel of oak for a noble ship,
Scarfed and bolted, straight and strong,
Was lying ready, and stretched along
The blocks, well placed upon the slip.
Happy, thrice happy every one
Who sees his labor well begun,
And not perplexed and multiplied,
By idly waiting for time and tide!

And when the hot, long day was o'er,
The young man at the Master's door
Sat with the maiden calm and still,
And within the porch, a little more
Removed beyond the evening chill,

The father sat, and told them tales
Of wrecks in the great September gales,
Of pirates coasting the Spanish Main,
And ships that never came back again,
The chance and change of a sailor's life,
Want and plenty, rest and strife,
His roving fancy, like the wind,
That nothing can stay and nothing can bind,
And the magic charm of foreign lands,
With shadows of palms, and shining sands,
Where the tumbling surf,
O'er the coral reefs of Madagascar,
Washes the feet of the swarthy Lascar,
As he lies alone and asleep on the turf.
And the trembling maiden held her breath
At the tales of that awful, pitiless sea,
With all its terror and mystery,
The dim, dark sea, so like unto Death,
That divides and yet unites mankind!
And whenever the old man paused, a gleam
From the bowl of his pipe would awhile illume
The silent group in the twilight gloom,
And thoughtful faces, as in a dream;
And for a moment one might mark
What had been hidden by the dark,
That the head of the maiden lay at rest,
Tenderly, on the young man's breast!

Day by day the vessel grew,
With timbers fashioned strong and true,
Stemson and keelson and sternson-knee,
Till framed with perfect symmetry,
A skeleton ship rose up to view!
And around the bows and along the side
The heavy hammers and mallets plied,
Till after many a week, at length,
Wonderful for form and strength,
Sublime in its enormous bulk,
Loomed aloft the shadowy hulk!
And around it columns of smoke, upwreathing,
Rose from the boiling, bubbling, seething
Caldron, that glowed,
And overflowed
With the black tar, heated for the sheathing.

And amid the clamors
Of clattering hammers,
He who listened heard now and then
The song of the Master and his men;

"Build me straight, O worthy Master,
  Stanch and strong, a goodly vessel,
That shall laugh at all disaster,
  And with wave and whirlwind wrestle!"

With oaken brace and copper band,
Lay the rudder on the sand,
That, like a thought, should have control
Over the movement of the whole;
And near it the anchor, whose giant hand
Would reach down and grapple with the land,
And immovable and fast
Hold the great ship against the bellowing blast!
And at the bows an image stood,
By a cunning artist carved in wood,
With robes of white, that far behind
Seemed to be fluttering in the wind.
It was not shaped in a classic mould,
Not like a Nymph or Goddess of old
Or Näiad rising from the water,
But modelled from the Master's daughter!
On many a dreary and misty night,
'Twill be seen by the rays of the signal light,
Speeding along through the rain and the dark,
Like a ghost in its snow-white sark,
The pilot of some phantom bark,
Guiding the vessel, in its flight,
By a path none other knows aright!

Behold, at last,
Each tall and tapering mast
Is swung into its place;
Shrouds and stays
Holding it firm and fast!

Long ago,
In the deer-haunted forests of Maine,
When upon mountain and plain
Lay the snow,

They fell,— those lordly pines!
Those grand, majestic pines!
'Mid shouts and cheers
The jaded steers,
Panting beneath the goad,
Dragged down the weary, winding road
Those captive kings so straight and tall,
To be shorn of their streaming hair,
And naked and bare,
To feel the stress and the strain
Of the wind and the reeling main,
Whose roar
Would remind them for evermore
Of their native forests they should not see again.

And everywhere
The slender, graceful spars
Poise aloft in the air,
And at the masthead,
White, blue, and red,
A flag unrolls the stripes and stars.
Ah! when the wanderer, lonely, friendless,
In foreign harbors shall behold
That flag unrolled
'Twill be as a friendly hand
Stretched out from his native land,
Filling his heart with memories sweet and endless!

All is finished! and at length
Has come the bridal day
Of beauty and of strength.
To-day the vessel shall be launched!
With fleecy clouds the sky is blanched,
And o'er the bay
Slowly, in all his splendors dight,
The great sun rises to behold the sight.
The ocean old,
Centuries old,
Strong as youth, and as uncontrolled,
Paces restless to and fro,
Up and down the sands of gold.
His beating heart is not at rest;
And far and wide,
With ceaseless flow,

His beard of snow
Heaves with the heaving of his breast.
He waits impatient for his bride.
There she stands,
With her foot upon the sands,
Decked with flags and streamers gay,
In honor of her marriage-day,
Her snow-white signals fluttering, blending,
Round her like a veil descending,
Ready to be
The bride of the gray old sea.

On the deck another bride
Is standing by her lover's side.
Shadows from flags and shrouds,
Like the shadows cast by the clouds,
Broken by many a sunny fleck,
Fall around them on the deck.

The prayer is said,
The service read,
The joyous bridegroom bows his head;
And in tears the good old Master
Shakes the brown hand of his son,
Kisses his daughter's glowing cheek
In silence, for he cannot speak,
And ever faster
Down his own the tears begin to run.
The worthy pastor —
The shepherd of that wandering flock,
That has the ocean for its wold,
That has the vessel for its fold,
Leaping ever from rock to rock —
Spake, with accents mild and clear,
Words of warning, words of cheer,
But tedious to the bridgroom's ear.
He knew the chart
Of the sailor's heart,
All its pleasures and its griefs,
All its shallows and rocky reefs,
All those secret currents, that flow
With such resistless undertow,
And lift and drift, with terrible force,
The will from its moorings and its course.
Therefore he spake, and thus said he:

"Like unto ships far off at sea,
Outward or homeward bound, are we.
Before, behind, and all around,
Floats and swings the horizon's bound,
Seems at its distant rim to rise
And climb the crystal wall of the skies,
And then again to turn and sink,
As if we could slide from its outer brink.
Ah! it is not the sea,
It is not the sea that sinks and shelves,
But ourselves
That rock and rise
With endless and uneasy motion,
Now touching the very skies,
Now sinking into the depths of ocean.
Ah! if our souls but poise and swing
Like the compass in its brazen ring,
Ever level and ever true
To the toil and the task we have to do,
We shall sail securely, and safely reach
The Fortunate Isles, on whose shining beach
The sights we see, and the sounds we hear,
Will be those of joy and not of fear!"

Then the Master,
With a gesture of command,
Waved his hand;
And at the word,
Loud and sudden there was heard,
All around them and below,
The sound of hammers, blow on blow,
Knocking away the shores and spurs.
And see! she stirs!
She starts, — she moves, — she seems to feel
The thrill of life along her keel,
And, — spurning with her foot the ground,
With one exulting, joyous bound,
She leaps into the ocean's arms!

And lo! from the assembled crowd
There rose a shout, prolonged and loud,
That to the ocean seemed to say,
"Take her, O bridegroom, old and gray,
Take her to thy protecting arms,
With all her youth and all her charms!"

How beautiful she is! How fair
She lies within those arms, that press
Her form with many a soft caress
Of tenderness and watchful care!
Sail forth into the sea, O ship!
Through wind and wave, right onward steer!
The moistened eye, the trembling lip,
Are not the signs of doubt or fear.

Sail forth into the sea of life,
O gentle, loving, trusting wife,
And safe from all adversity
Upon the bosom of the sea
Thy comings and thy goings be!
For gentleness and love and trust
Prevail o'er angry wave and gust;
And in the wreck of noble lives
Something immortal still survives!

Thou, too, sail on, O Ship of State!
Sail on, O Union, strong and great!
Humanity with all its fears,
With all the hopes of future years,
Is hanging breathless on thy fate!
We know what Master laid thy keel,
What workman wrought thy ribs of steel,
Who made each mast, and sail, and rope,
What anvils rang, what hammers beat,
In what a forge and what a heat
Were shaped the anchors of thy hope!
Fear not each sudden sound and shock,
'Tis of the wave and not the rock;
'Tis but the flapping of the sail,
And not a rent made by the gale!
In spite of rock and tempest's roar,
In spite of false lights on the shore,
Sail on, nor fear to breast the sea!
Our hearts, our hopes, are all with thee,
Our hearts, our hopes, our prayers, our tears,
Our faith triumphant o'er our fears,
Are all with thee,— are all with thee!

—Henry W. Longfellow.

NOTES

Ll. 39-50. By the beam of a vessel is meant her extreme width. If she were "broad in the beam," she would be harder to sink. If she sloped aft, that is, toward the stern, abruptly, she would not sail steadily for the same reason that a short stick can be more easily turned in the water than a long one can. Sloping by "slow degrees" would cause her to gather forward-moving force from the side pressure of the divided waters and yet cause her to ride steady and to obey the helm.

L. 69. By "wooden wall" is meant the ship. More specifically the sides of the ship.

L. 95. "Lay square the blocks" means to place them so that their upper surfaces should be level and their ends should lie at the proper angle. Otherwise the ship would not be built plumb and true.

L. 219. "Sark." Here, a loose flowing garment.

EXERCISES

1. Give a synonymn for the word "straight" in the first sentence.

2. Why should the word "Master" be capitalized?

3. Explain:

"the heart
Giveth grace to every art."

4. What is given as the purpose of making the model?

5. How could this make the hand more swift and sure in the "greatest labor?"

6. Why did not the Master use the Great Harry as a model?

7. Explain concretely how a single word or movement may set in motion many "wheels of toil."

8. Is Youth or Old Age generally chosen to plan a work?

9. Which is usually chosen to *do* the work?

10. Judging from the name of the proposed ship, what story is to be told in this poem?

11. From this point of view,

(a) Who was the Master?
(b) Who was the Youth?
(c) What was the little model?
(d) What was the Great Harry?
(e) What were the planks for building the vessel?
(f) To what historic incident does the author refer in: "The sun was rising o'er the sea?"
(g) Who was the bride?
(h) What was the keel of the ship?
(i) What was the first day's work?
(j) What is represented by the family gathering at the close of day?

(k) What is meant by the daughter's head being pillowed on the young man's breast?

(l) What historic events are symbolized in, "The heavy hammer and mallets plied"?

(m) What does the black smoke and the caldron seem to symbolize?

12. What is made quite plain by having the image at the bow resemble the daughter?

13. What is accomplished by making the lines from 258 to 284 so short?

14. What historic personage of our country corresponds to the pastor?

15. Judging by the time at which this was written, what does the poet mean by the last stanza?

Collateral Readings

A list of readings suggested for similar study because they bear upon some phase or phases of the above:

Drake	*The American Flag*
Henry	*An Appeal to Arms*
Holmes	*Old Ironsides*
Kipling	*Recessional*
Markham	*Lincoln, the Man of the People*
Tennyson	*Charge of the Light Brigade*
Whitman	*O Captain, My Captain!*

TO A WATERFOWL

Discouragement is probably the greatest obstacle to success that can come into one's life. Into nearly everyone's life it must come at some time. It is a wonderful thing to find something that gives one hope and aid during this trying time. William Cullen Bryant recognized this when at the close of a day when he had seemingly failed in his work, he took heart from watching the flight of a wild waterfowl. He immediately put into the form of verse his impressions and thoughts inspired by this slight yet significant incident. This poem is the result.

Mr. Bryant's successful study of Greek literature gave him a splendid command of English. It also affected his manner of writing. His poetry has a peculiar dignity and grandeur that makes one think of the old Greek hero stories and characters.

In order to appreciate the skill used in the construction of this poem, let us picture the flight of wild waterfowl as we have observed it. When we next see the wild geese migrating we will derive great pleasure from recalling and repeating from memory all or part of Mr. Bryant's thought expressed here.

Whither, midst falling dew,
While glow the heavens with the last steps of day,
Far through their rosy depths dost thou pursue
Thy solitary way?

Vainly the fowler's eye
Might mark thy distant flight to do thee wrong,
As, darkly painted on the crimson sky,
Thy figure floats along.

Seek'st thou the plashy brink
Of weedy lake, or marge of river wide,
Or where the rocking billows rise and sink
On the chafed ocean-side?

There is a Power whose care
Teaches thy way along that pathless coast,—
The desert and illimitable air,
Lone wandering, but not lost.

All day thy wings have fanned,
At that far height, the cold, thin atmosphere,
Yet stoop not, weary, to the welcome land,
Though the dark night is near.

And soon that toil shall end;
Soon shalt thou find a summer home, and rest,
And scream among thy fellows; reeds shall blend
Soon o'er thy sheltered nest.

Thou'rt gone; the abyss of heaven
Hath swallowed up thy form; yet on my heart
Deeply hath sunk the lesson thou hast given,
And shall not soon depart.

He who, from zone to zone,
Guides through the boundless sky thy certain flight,
In the long way that I must tread alone
Will lead my steps aright.
— William Cullen Bryant.

EXERCISES

1. In how many ways does the author tell us the time of day in the first stanza?

2. Choose the words in this stanza that would not be used in ordinary conversation.

3. What thing made the poet study this particular bird's condition?

4. How does he make us know that the bird was at some distance from him in the second stanza?

5. Choose from this second stanza a striking poetic figure of speech.

6. Choose an expression that makes line 9 clearly poetic.

7. Do the same in line 10 and in line 11.

8. Point out the relation between stanza 4 and stanza 5.

9. What is the "lesson thou hast given"?

10. It is said that the poet had been seeking employment during the day preceding this incident. He had failed to secure it. Did the incident apply merely to the disappointment of that day?

11. What was "the long way that I must tread alone"?

COLLATERAL READING

The following selections may be dealt with in a similar manner and accentuate the same phases of life.

Lyte	*Abide with Me*
Newman	*Lead, Kindly Light*
Tennyson	*Crossing the Bar* *The Shell*
Whittier	*The Eternal Goodness* *The Red River Voyageur*
Wordsworth	*Daffodils*

THE SOCIALIZED RECITATION AND PROJECTS FOR READING

By Dr. Charles A. McMurry

One of the stiff problems for teachers of reading is that of finding the fit combination between the mechanics of reading and the appreciation and expression of content and of literary quality. The mastery of form as a means of interpreting and expressing the best thoughts is an ideal to be kept in mind.

The first requirement is that the teacher herself, in speech and utterance, should be a standing example of this fitting combination of distinct utterance on the one side, with full weight and expression, or sympathetic rendering of thought, on the other. The teacher should be a past-master in this fine art of expression. The children will learn as much by direct contact and unconscious imitation of a good teacher as from exercises aimed at the same results.

Most teachers, however, themselves are in need of training in the distinct articulation of elementary sounds, in syllabication, and in distinct pronunciation of words and sentences. By a study of the plans and exercises given in Public School Methods, teachers can discipline themselves in this fine art of utterance, and then they will be in shape to deal with children.

Whatever exercises are imposed upon children to improve their pronunciation should be related as closely as possible to practice. The words should be taken out of the reading lessons and referred back to them, and the revised pronunciation incorporated at once into the lessons. It may be necessary to give special drills on short vowel sounds in unaccented syllables, on final consonants, on particular sounds, such as, *th*, *c*, and *g*, on the different sounds of the same vowel, and on prefixes and suffixes. But unless these drills are made effective at once and steadily in the daily readings of well chosen selections, not much progress will be made.

On the side of thought-mastery of complete poems and stories, which are the superior products of literary masters, the teacher should first of all be a studious worker, one who can devote herself unreservedly to the deeper thought processes, and to a full appreciation of such a work. Not only the story itself requires close, strong, interpretative thinking, but the historical and geographical side-lights require full time and consideration. The basal idea should be dug out to the roots, and the contemporary environment of the story requires full illumination.

A standard piece of literature, like the *King of the Golden River* or the *Courtship of Miles Standish*, is of such importance as a teaching unit that the teacher should become a specialist in deeper knowledge and appreciation before she undertakes the serious business of teaching it.

When once the dominant theme is mastered and felt with full comprehension and sympathy, the question should arise, What other literary selections have a related or kindred theme? Literature may furnish many selections that can be grouped round the original work as a type. This opens up a wide field for discriminating, thoughtful study. It will be likewise profitable later to set children at work investigating these kindred poems and stories and comparing them with one another.

Examples of this kind of study are presented in some of the selections which follow:

In this plan for the study of a complete literary selection, the two stages of the process are plainly marked: first, a complete devotion to a thorough-going interpretation of the poem or masterpiece itself in its concrete details and in its root meanings, with full appreciation of its imagery and literary quality; second, there follows the larger survey through comparison with other kindred selections. This second stage leads to more discriminating reflective judgments and to broader and deeper conceptions of the work of great writers.

The story of Horatius in its full form is given as an illustration. The first part will consist in a reading, analysis and discussion of the poem itself under its main sections; the second part leads to a comparative study of the stories of Bruce and William Tell with Horatius. This comparison of stories having the same central theme is a method of study which cultivates reflective and judicial habits of thought and leads to an organization of literary materials into permanent groupings. Such comparisons are easily within the scope of the children's powers, if only they have access to the story materials. In reality it opens up the best opportunity for the proper expansion, in an inadequate way, of the children's studies, as will be shown later.

HORATIUS AT THE BRIDGE

In undertaking to teach the ballad of Horatius we should notice, first of all, the central idea to be brought out in the story. By reading the poem through we will easily discover this idea and the whole series of circumstances that brought this idea into notice. For an idea has a history, a development. To trace through this progressive development of the idea and thus see it in its full meaning is the purpose of the author and should be the guiding method for the teacher.

In the case of the ballad on Horatius the main idea is very clear. In fact, it is clearly stated in the poem itself, and one of the first questions asked of the children as they read the story through is, Where in the poem itself is the main idea clearly stated? This is the point of view from which the children should read and search this narrative.

This suggests that one of the principal problems for the teacher is to find out the most suitable questions to ask—those which will cause the children to study the ballad and work out its meanings for themselves. If the teacher has found the central idea and has noticed the steps in its development, she can then more easily ask the main questions which unfold the whole story in its natural progress.

Learning how to ask good questions is one of the difficult problems in teaching, and it is well for the instructor to discover that such questions lie along the track of the main developing idea.

Who is the central character in this ballad, and where is he first named? There are several other characters who come into prominence; why is Horatius called the leading character, so that even the ballad itself is called by his name? If Horatius is the leading character, the study of the poem ought to bring out the relation of the other persons to him as the central figure. This suggests some other pertinent questions: How does it happen that Horatius is not mentioned until the poem is nearly half complete?

The chief figure in a story is the embodiment or representative of its controlling idea, and wherever the chief character comes into strong action we can look for the dominant motive in the piece. What is the strongest quality in Horatius, and where does it appear most in evidence?

We may now return to the attempt to learn why twenty-six stanzas of the poem precede the appearance of Horatius. The answer to this question calls for an examination into the whole arrangement of the story. It might be well to ask this question in the assignment of a lesson after the first half of the poem has been once read. It will give the children opportunity to study with a motive and to do considerable thinking. This ballad belongs to an ancient period and requires us to think our way back into the crude, primitive life of the Roman people, their way of living in walled cities, their methods of carrying on war and of fighting, their religious ideas, their local history and geography, and the relation in which Rome stood to neighboring tribes and cities.

From this point of view we may enter upon a more careful survey of the old Etruscan and Roman life, as depicted in the poem. Read the first twelve stanzas. (The poem, if not in your school library, can be purchased for a few cents from any leading schoolbook publisher. It is contained in Macaulay's *Lays of Ancient Rome.*)

Macaulay takes it for granted that we know about the traditional early history of Rome, the story of the founding and of the early kings, how the Tarquins had been expelled from the city, the conflicts with the neighboring tribes, and what kind of people the Romans and their neighbors were.

Two questions will almost cover these twelve stanzas. How was the Tuscan army made up? What was the effect at Rome of the approach of Lars Porsena and his Tuscan army?

As soon as Horatius appears, the story moves on rapidly to its climax. In what ways does Horatius prove himself a complete hero? Compare him with other persons described in this story.

Stanzas 13 to 26, which should be read at this point, give a series of war pictures peculiar to the olden time. They are worth studying as examples of vivid picturing. Each one might be painted on canvas in full color; the whole gives an interesting series of ancient customs, dress and armor. To illustrate just such scenes, a collection of pictures and photographs could be gathered as a reënforcement to the story. The evils and ruin caused by war are here displayed in honest and picturesque fashion.

Some explanations will be required to make plain the difference between those days and ours, as, *skins of wine, roaring gate, the fathers girded up their gowns, the long array of spears, by port and vest, by horse and crest, the fourfold shield, Porsena sat in his ivory car.*

Stanzas 27 to 34 are full of heroic decision and energy. The time for instant action has come, and Horatius and his two heroic companions prove to be the men of the hour. Their boldness and resolution rise to the full measure called for by this crisis. While the consul and the older leaders stand back, these younger men in the vigor of youthful strength and confidence push to the front and assume the place of danger.

Stanzas 35-52 describe the combat in which the "dauntless three" prove equal to the task in the final test of desperate conflict. There are heroic men on both sides who are willing to take the greatest risks. There is also the coward, whose meanness is equaled only by his cowardice. Here is found a series of character studies thrown out in bold relief by the desperate conflict that is here staged.

The remainder of the poem, stanzas 53 to 70, while still heroic, is a gradual letting down from the high tension. Looking back now over the whole action of the poem, how does the central figure of Horatius reveal itself?

THE HISTORIC AND GEOGRAPHIC SETTING

In the poem itself we find much description of the customs and manners of the old Roman days and some interesting geographic pictures, but much fuller information is to be desired. We will suggest in this connection a series of projects which the children themselves may work out with the assistance of the teacher.

1. Find out how the wall of the ancient city of Rome was built, also its gates and towers; and how it was defended.
2. Work out a map of the ancient seven-hilled city, showing the hills and important places and the walls.
3. Describe the equipment, arms and dress of a Roman knight of those times.
4. Make a map of the Roman territory and of Etruria and other neighboring peoples.
5. Make a collection of pictures of the dress and arms and walled cities of the old Roman times.
6. Inquire into the present ruins of the ancient city of Rome, its interesting buildings and palaces, ancient temples, forum, etc.

REFERENCES

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Cincinnatus, in *Plutarch's Lives.*
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Liddell's *History of Rome.*
History of Rome for Beginners. Shuckburgh. Macmillan.
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Other Heroes. Robert Bruce of Scotland, in defending his people against the attack of the English, met with many bold adventures which have placed him high among the heroes of

Scotland. In his defense of the rights of the Scotch people, his life was often in extreme danger. The stories of his exploits are told in Scott's *Tales of a Grandfather*, and are given also in Type Studies and Lesson Plans of George Peabody College. A comparison of these deeds with those of Horatius and his helpers in defense of Rome will prove that each country has its brave men, and that men of later times are quite equal to the heroes of old in courage and strength. Boys and girls should be allowed to pass judgment on such champions from different countries, and express their own opinions as to which showed the higher type of courage and manhood.

William Tell, the defender of Swiss freedom, is another man whose deeds are often told and are cherished among the mountain people of Switzerland. These mountaineers had always been a free people, but the king of Austria decided that he would compel them to submit to his control. For this purpose he sent Gessler, a hard and cruel man, to establish his authority over the Swiss. The cruel conduct of Gessler and others sent out by the king aroused the Swiss people to resistance. Several of Tell's exploits in this struggle against the rulers sent by the king are often told; his story is well known to nearly every boy and girl.

Socializing Instruction. The story of Horatius is one of a group of kindred stories, all of which illustrate heroism in defense of home and country. Belonging to this special class of hero tales expressing patriotism may be mentioned Wallace and Bruce in Scotland, William Tell and Winkelried in Switzerland and David and the Macabees in Hebrew history. It happens also that all these stories are handed down in standard literary form and as pieces of literature may be compared with one another.

It would be entirely appropriate to ask the children who are completing the story of Horatius to read Scott's tales of Wallace and Bruce or the story of William Tell, and to set up a comparison of merits between these heroes of different countries. Look into the adventurous exploits of Bruce, and see if he will measure up to the standard of Horatius in courage and strength of character.

These passages are sufficient to suggest a variety of readings that children may be encouraged to undertake with the purpose of interpreting and comparing characters in famous stories. This may well lead to a form of socialized recitation in which the children manage the class exercise themselves. Let different members of the class agree upon a reading of these stories, with the purpose of reporting upon them in class. Comparisons between Horatius, Bruce and William Tell, David and Leonidas are definitely prepared; a free discussion should follow as to the character and relative merits of such men as representative heroes of different nations. This gives the children entire freedom to read and report upon the characters studied. With suggestions from the teachers, the class should appoint a leader and conduct the discussion, partly by reading papers prepared and partly in off-hand debate.

Such readings involve an extensive correlation of literature, history, geography and language, a correlation that is natural and essential, not forced and artificial. It will give the children training in the use of books and libraries and will develop a growing interest in books of superior quality. The children therefore should be encouraged to use freedom in the choice of books, in selecting interesting characters for discussion, and in passing judgment on stories and authors.

PROJECTS AND PLANS FOR TEACHING READING

By Dr. Charles A. McMurry

FOURTH YEAR

SEPTEMBER

Review selections in last part of third reader.

Memorize short, select passages of prose and verse from reading lessons. First, drill on rendering of such passages before memorizing, so that good, natural expression is secured in the memory work.

Emphasize distinct utterance of final consonants and short vowel sounds, as *d* and *t* in *land* and *let*. After special drills are given on lists of words taken from reading lessons, see that this training is put in practice in reading.

Teach children how to find words in the dictionary. (See Index p. 19.)

Have occasional oral reproduction of stories in the readers.

OCTOBER

When introducing a new selection for reading, have an introductory discussion of the story to awaken the interest of the children. Connect up with the children's experience, as in the case of the *Barefoot Boy* (Vol. IV, p. 119) or *Cinderella* (Vol IV, p. 110).

Continue suitable selections in the third reader, with care as to natural expression and distinctions.

Put new and difficult words on the board in making lesson assignment, and have a short drill and also explanation of meanings.

Read selections from *Fifty Famous Stories Retold*, or from *Robinson Crusoe*, with suitable discussions so as to awaken a real interest.

Use a variety of supplementary readers.

Teach children in reading to recognize groups of words, such as phrases and clauses, as units, as a means for quick grasp of whole sentences.

NOVEMBER

In reading a complete story or poem, keep the main thought of the selection before the class by apt questioning. This is a good thought basis for all instruction in reading. Let the teacher bring good illustrations to help clarify this central thought.

Show children how to get the meaning of words from the dictionary. See *Dictionary Work and How to Use It.* (See Index, page 19.)

Keep up the drills on final consonants and short vowels until right habit is formed in daily reading exercises.

For supplementary reading use simple biographical stories from American history. Discuss the characters, such as Columbus (Vol. V, pp. 196, 369, 370), Boone (Vol. III, p. 58; Vol. V, 140). Develop interest in such reading.

Review and keep up the drill exercises suggested for September and October. Remember that little is accomplished until correct habits are formed.

DECEMBER

The teacher should study an entire story or poem as a whole and the relation of the parts to the central idea. (See Story; Poems, in Index Volume.) This will give a good basis for questioning and for oral reproduction. Give children plenty of freedom in the oral expression of their own thought.

Continue the supplementary reading of very simple American history stories, as American Hero stories, American Explorers. Get also oral reports from the outside reading of such stories.

Give drills on difficult sounds as they appear in reading, as *th* in *thin* and *there*, *p* and *b*, *sh* and *ch*, *v* and *w*. Special drills will help, as Ben Brown bent Bob Bang's big bow.

Keep up the attack on the dictionary. Notice the markings of the vowel *a*.

Connect up the geography and history with reading by a proper use of wall maps and blackboard sketches. This correlation of studies is important.

JANUARY

Connect the story or poem as closely as possible with the home and personal experience of children.

Short drills are essential at the beginning of the lesson on special words offering difficulty.

Teach the children to interpret new words and to pronounce without help by using the phonic sounds. This is a continuation of the plan followed in primary grades. (See *Phonics*, Vol. II.)

Encourage children to dramatize parts of stories by noticing dramatic situations and by suggestion.

Drill on long and short vowel sounds and their markings for help in dictionary work.

FEBRUARY

In reading selections in the fourth reader get up some rivalry for expressive oral reading.

Dramatize some of the American history stories, as Boone, Smith or Hennepin.

Give lively drills on prefixes and suffixes, as, *in*, *un*, *sub*, *ness*, *ful*, *able*, etc.

Keep up steadily the phonetic interpretation of new words by the children themselves.

Continue the map studies in American history stories.

MARCH

March and April are good months for the study of poems and stories of springtime, connected with nature study excursions.

Teach children to see that paragraphs express larger sections of a story and suggest an outline of leading points.

The correlation of history, geography and literature in the reading lessons should be continued.

In the dictionary work, drill on diacritical marks.

Continue drills upon prefixes and suffixes and their meaning, on words found in reading lessons.

APRIL

Choose nature poems and descriptions, and notice that the poets are fond of nature pictures. (See Poems, in Index.)

Continue the dramatization of American history stories, as George Rogers Clark, Lincoln and Fremont.

Put important difficult words on the blackboard for special drill for several days.

The syllabication of words and drill on syllables is a great help to clear articulation. (See Vol. IV, p. 36.)

Keep up the drill on phrases and clauses as parts of larger wholes or sentences.

MAY

The central idea in a complete story requires thoughtful consideration. The effort to find this leads to good thinking.

Good expression is based on good thinking. See that children understand before trying to express thought.

Dramatization is a means of experimental realization and full spontaneous expression.

Drills on words, phrases and phonic elements are a means to the end of efficient, successful reading.

Learn how to combine thought work and drill exercises into expressive reading.

JUNE

The standard reader should be well mastered. See that the appreciative thought element is prominent.

Give frequent reviews involving the main kinds of exercises during the year.

See that the ability to use and interpret the dictionary is well developed.

Self reliance in pronouncing new words should be one result of this year's work. Another result should be a readiness in the children in reading supplementary books in history and geography.

FIFTH YEAR

It may be necessary to read a second fourth reader in the first part of the fifth grade.

SEPTEMBER

The teacher needs to prepare each reading lesson with much care, so that she will know how to assign it, what words will need special study, what expressions will have to be explained, how she can best develop the thought of each paragraph and lead the class to appreciate it. (See page 55, Section 24.)

The new words should be placed on the board, before the recitation period. If they contain familiar syllables, let the class suggest how the words should be syllabicated. If they contain difficult combinations of letters, the teacher should divide and mark the sounds of the letters. Let the pupils look up the meaning of the words in the dictionary, but assist them in selecting the meaning that applies to each word as it is used in the lesson.

Continue the work in phrasing begun in the fourth grade. Let the class tell what groups of words in certain sentences should be read together. (See page 10.) Begin with short sentences and lead up to complex and compound sentences. This is an aid in securing good expression, especially in reading poetry.

Before beginning each recitation, the teacher should endeavor to create a proper spirit so that the pupils will catch the spirit of the selection and enjoy the lesson thoroughly.

If there are stories of the early explorers of America in any readers, let the pupils read these in connection with the geography and history work.

OCTOBER

Continue the use of the fourth reader. If the supplementary readers contain lessons on Canadian subjects, read them to supplement the geography work. Occasionally let the class read a new, easy selection at sight.

Study with the class all the new words in the reading lessons. Whenever possible, let the pupils syllabicate these words for themselves. Assist them to select the correct definition for each new word.

Review the prefixes and their meanings which were taught the first month. Whenever a word occurs in the reading lesson which contains a familiar prefix or suffix, recall the meanings of it and see how it applies in the word under discussion.

Give drills in articulation and pronunciation, using such words in the exercises as are often incorrectly pronounced by the pupils. For suggestive drills, see page 32. Refer again to the chapter on *The Dictionary and How to Use It*, in the *Index* Volume.

NOVEMBER

In this grade children should begin to enjoy some of the longer English productions, such as *The Wonder Book*, *Arabian Nights*, *The Pied Piper of Hamelin*, *Water Babies*, and *King of the Golden River*. Such readings should be made interesting and spirited.

Continue the standard reader. If any accessible readers have stories of the Pilgrims, Captain Miles Standish, Boston or any other lessons pertaining to New England, let the class read them this month. Two or three times during the month let the class read some selections at sight. (See page 61, Section 28.)

Continue the study of new words, the use of the dictionary and the study of suffixes.

DECEMBER

The biographies of authors with anecdotes and interesting personal details should be introduced in connection with their works, as Irving, Scott, Longfellow.

Continue the standard reader. If any of the supplementary readers contain stories of William Penn, Benjamin Franklin, John Smith or Sir Walter Raleigh, let the class read them this month. (These stories are given in Tappan's *American Hero Stories*, and Gordy's *American Leaders*.)

JANUARY

The longer classic stories should have the first place; second, the supplementary readers for sight reading; third, supplementary readings from geography, history and nature study.

Continue the standard reader. If in the supplementary readers there are lessons on rice, cotton or sugar, read them in connection with the geography work for this month. Once a week or once in two weeks have the class read easy, new material at sight to teach them to be more independent readers and to know the pleasure to be obtained from reading.

Continue exercises in phrasing. Give occasional drill in articulation and pronunciation.

FEBRUARY

The memorizing of choice passages selected from the regular readers is desirable—short prose passages as well as poetry.

Children should now learn to compare stories and selections with those previously studied, a habit which both reviews previous studies and cultivates a superior form of thinking.

In addition to the regular reader read from *American Hero Stories*, or Gordy's *American Leaders*, the stories of Daniel Boone, Clarke and Lincoln.

Make a study of new words. Let the class syllabicate them without help, whenever possible. Give frequent exercises in phrasing. Give special attention to expression.

MARCH

In reading standard selections let children cultivate independent ability to think, to judge and to master difficulties by their own thinking. They should learn to see the pictures drawn by poets and to show a free use of imagination.

Continue the standard reader. If possible, secure Olive T. Miller's *Second Book of Birds*, to read when the birds are returning. If any of the supplementary readers have lessons relating to the Western states, read these lessons in connection with the geography work.

APRIL

Silent reading may be well cultivated; it is devoted to a quick and full grasp of thought. To introduce this a discussion is needed, showing how to grasp the main thought as one reads, how to image, how to perceive essentials.

Continue the standard reader and the book on bird life. Let the class read stories or articles brought from home. Begin reading an interesting book to the school for opening exercises. Occasionally let the pupils during the reading recitation take turns reading from this book.

Continue the study of new words. Have frequent drills on the words learned during the week or the month.

MAY

Devote a part of each lesson to expressive, dramatic oral reading and a part to silent interpretative reading and reproduction.

Keep up the drills on new words and on articulation, with constant application to reading. Review and apply dictionary study.

JUNE

Complete the standard reader and make a free use of supplementary readings, reproductions and discussions.

Keep up reviews and drills on phonics and study of prefixes and suffixes.

SIXTH YEAR

The pupils this year should gain in ability to grasp the thought readily and to read clearly and agreeably. They should derive much pleasure from their reading and form a taste for good reading. They should read such stories as *The Hoosier School Boy*, *Robinson Crusoe*, *Gulliver's Travels*, *King of the Golden River*, stories from Hawthorne's *Wonder Book*, stories of Robin Hood and American history stories. They should also read many classic poems.

The teacher should prepare each reading lesson with much care, so that she will be able to give it a proper setting and make difficult expressions clear.

In this grade, the pupils should begin to think about the characters they read about and to take note of the plot of the story. Too much in this line should not be expected, but the pupils will enjoy a story better if these things are discussed after reading. Read carefully, pages 77-83, Sec. 17, 19, 20, 24.

Before teaching a poem, read page 86, Sec. 29; page 84, Sec. 27; and the interpretation of a patriotic poem given on pages 94-100.

To be successful in teaching reading, one must make careful assignments. (See page 55.)

SEPTEMBER

In the introduction to larger relations, see that the general setting of the story or poem is made clear. This is generally presupposed by the author. Convert the study of such selection into a problem.

As the pupils talk and read, listen for errors in pronunciation and articulation. Give drills to correct these errors. (See page 32.)

Review the meaning of the prefixes and suffixes taught during the first two months of the fourth year. (See page 141.)

Make a careful study of *Tubal Cain*, by Mackay, and the *Village Blacksmith*, by Longfellow. (See Vol. III, page 424.) Lead the class to get the mental picture each suggests.

OCTOBER

Continue the work in the standard reader. Study a prose classic, also *The Huskers; Skipper Ireson's Ride*, by Whittier, and the *Song of the Wind*. Teach the pupils to recognize figures of speech. (See pages 16-21.)

Continue the review of prefixes and suffixes taught during November and December of the fourth year. (See page 143.)

NOVEMBER

Continue the standard reader and a book of history stories. Have sight reading frequently. Study a prose classic and one or more classic poems. Browning's poem, *How They Brought the Good News from Ghent to Aix*, *The First Thanksgiving Day* (Vol. V, Thanksgiving Program), the *Concord Hymn* and *Paul Revere's Ride* are good. Continue to study figures of speech.

Continue the study of words, prefixes and suffixes. Review those taught in the fourth year.

DECEMBER

Read from the standard readers, the book of history stories and from supplementary readers. Let the reading supplement the geography work, whenever possible. From the middle of the month on, let the pupils read Christmas stories. These may be taken from school books or brought from home by the children. Let them read *Christmas Bells*, by Longfellow, *The Christmas Sheaf* and *Little Gottlieb*, by Cary. (See Christmas Program, Vol. V.)

JANUARY

Continue the standard reader. If Mabie's Norse stories are accessible, let the pupils read some of them. Let them study *The Wreck of the Hesperus* (page 426) and *Lord Ullin's Daughter*.

Continue the study of simple, figurative language. Occasionally write words on the board and ask the pupils to write comparisons: as, *snowflakes, bare trees. Snowflakes are like tiny white feathers. The bare trees look like ghosts.* Lead the class to see how such comparisons bring pictures to one's mind and make a composition more enjoyable. The pupils will see that we express comparisons by using *like.* Show them that we may sometimes make our statements more forcible by omitting *like: Snowflakes are little white feathers. The bare trees are ghosts.*

Continue the study of new words. Teach the pupils how to tell in the dictionary what part of speech a word is. Review the prefixes and suffixes taught in the latter part of the previous year.

FEBRUARY

Continue work in the reader, supplementary readers and sight work. If Coffin's *Boys of '76* is accessible, let the pupils read from it occasionally. Let them read the stories of Lincoln and Washington also. (See Washington and Lincoln Programs, Vol. V.)

Give occasional drills in articulation, pronunciation and syllabication. Write long unfamiliar words on the board. See how many of the class can divide them correctly into syllables and then pronounce them. (See page 36.)

MARCH

Continue the standard reader, historical stories, and if a bird book is accessible, introduce it this month.

Let the pupils read the *Voice of Spring*, by Mrs. Hemans, and *Excelsior*, by Longfellow. (See Vol. III, page 430, for the poem.)

Before teaching *Excelsior*, tell the pupils how Longfellow came to write it. He saw a fragment of a newspaper bearing the seal of the state of New York. It consisted of a shield with a rising sun and the motto, *Excelsior*, in Latin. His imagination at once pictured a boy climbing the Alps. He reached for a piece of paper and picked up a letter just received from a friend. On the back of it he wrote the poem, beneath which he wrote the statement: "September 28, 1841. Half past 3 o'clock, morning. Now to bed."

Notice the figures of speech found in the reading lessons. Teach the meaning of simile and personification. (See page 16.) Let the pupils find examples of these.

APRIL

Continue the regular reader, the history reader and some nature reader. Have frequent exercises in sight reading. Let the class read *March* by Bryant, *The Beaver*, by Howitt, and *The Mountain and the Squirrel*, by Emerson. (See *Poetry of the Seasons*.)

Notice in these selections, the figures of speech which occur. Teach the pupils the meaning of metaphor. (See page 17.)

Continue the study of new words and of those having a peculiar meaning.

MAY

Continue the lessons in the readers and the sight reading exercises. Read several spring poems as, *The Brook*, by Tennyson; *The Brown Thrush*, Larcom; *The Barefoot Boy*, Whittier. (If the latter is selected, see Type Study, page 122.)

JUNE

Complete the study of some larger classic, as *The Legend of Sleepy Hollow* or *Horatius*.

Review by making comparisons. Incorporate reviews into regular studies.

SEVENTH YEAR

Besides the regular reader, some or all of the following selections should be used: *Evangeline, Miles Standish, Herve Riel, Sohrab and Rustum, The Last of the Mohicans, Tales from Shakespeare, The Call of the Wild.*

The study and comparison of several selections by the same author is a good plan. Silent reading and reporting upon the results may employ a large part of the time of children, while oral reading can be much reduced. Sight reading for the purpose of acquiring readiness and fluency may be employed frequently to advantage.

SEPTEMBER

Use *Horatius at the Bridge*, and related stories and ballads. *Tom Brown's School Days* may be used this month and next for silent reading and discussion.

OCTOBER

Continue the selections in the reader and the reading from *Tom Brown's School Days*. Towards the middle of the month, take up the study of *The Great Stone Face*, by Hawthorne.

Note: High upon a vertical cliff in the Franconia Range of the White Mountains is a projection of rocks bearing an almost perfect resemblance to the human face. This wonderful structure is known as *The Old Man of the Mountain* and also as the *Profile*. The profile, which measures 80 feet from chin to forehead, projects out over a little lake in which it is mirrored. It is supposed that Hawthorne's story *The Great Stone Face* was suggested by this profile, but the valley he describes bears no resemblance to the mountain pass in which the profile is located.

A Type Study. This story of *The Great Stone Face* divides itself into six parts, as follows:

I. The description of the Valley, the Face, and Ernest.
II. The Coming of Mr. Gathergold.
III. Old Blood and Thunder.
IV. Old Stony Phiz.
V. The arrival of the Poet.
VI. The discovery of Ernest's likeness to the Face.

Since there are a good many difficult expressions in the story, a class will probably not be able to read one of the divisions in a recitation, but the teacher should keep the whole in mind, for each part represents a definite step in the development of the principal character. By questioning the class, the teacher should lead them to note this gradual development. For convenience, it will be assumed that the class can prepare the whole of one of the divisions for a lesson.

The Assignment. *Teacher:* How many of you have heard of Nathaniel Hawthorne? Do you know anything about him? Since he wrote a great many stories, I think you will be interested in knowing what kind of a man he was. You will find a little sketch of his life in the encyclopedia. Perhaps some of your older brothers and sisters can tell you something of him.

This is considered one of Hawthorne's best short stories. As you read it, see if you can understand why this is true. Tomorrow we shall read to the paragraph in which Mr. Gathergold is described. I hope you will enjoy the description of the Great Stone Face and of Ernest.

(Before the recitation, put on the board all the difficult words and expressions. Give a short drill on the pronunciations and meanings. Let the pupils give synonyms for the hard words, when possible. Leave the list, and each day add to it the new words in the new lesson. Whenever there are a few spare minutes, let the pupils see how quickly they can pronounce these words.)

The Lesson. *Teacher:* Who can tell me something about Hawthorne?

John: He was born in Salem, Mass., July 4, 1804. His father was a sea captain who died when Nathaniel was but four years old. He had two sisters.

Teacher: That is good as far as you have gone. Who can tell us more about this boy?

Henry: When he was ten years old, he went to live with an uncle who lived on a farm near Sebago Lake, Maine. He had no one to play with, but he enjoyed rambling through the woods alone, and in winter he sometimes skated on moonlight nights until after midnight. He stayed with this uncle a year and learned a great deal about nature, for he seemed to see everything.

Teacher: That is a good story, Henry. Did this boy have no education?

Mary: His mother hired a private teacher for him, and when he grew up he went to college. He was not a very good student, but very few could write as fine things as Hawthorne could.

Teacher: Does anyone know how he spent his time when he was out of college?

Ethel: He stayed at home with his mother and sisters. He did not go out in company at all. Sometimes he went for long walks alone.

Teacher: How do you think Hawthorne's being so much alone affected his life?

Edith: It made him shy. It was hard for him to meet strangers.

Teacher: Good. Who can tell us what Hawthorne wrote?

John: His best story is *The Scarlet Letter*. He also wrote *Tanglewood Tales*, *Twice Told Tales*, *The House of Seven Gables* and a number of others.

Teacher: Does any one remember where Hawthorne lived when he wrote many of these stories?

Kate: He lived in an old-fashioned house, called *The Old Manse*, in Concord, Mass.

Teacher: That is good. Now we will proceed with the lesson. How many liked the beginning of this story?

The Reading. *Teacher:* You may read the first paragraph of the story, Mary. (She reads.)

Teacher: How many of you can see the picture of the little boy and his mother? What time of the day is it?

John: It is nearly evening. The sun is setting.

Teacher: What were they looking at?

Ethel: The Great Stone Face.

Teacher: Henry, read the next paragraph. (He reads.)

Teacher: Where did this child and his mother live?

Mary: They lived in a wide valley surrounded by high mountains.

Teacher: What tells you the valley was *wide*?

Mary: Spacious means about the same as wide, and besides, it says *thousands* of people lived in the valley, so it must have been wide.

Teacher: What kind of homes did these people occupy?

Henry: Most of them were log huts.

Teacher: I wonder why?

Henry: Logs were easy to get, for forests grew all around.

Teacher: Good. What does the author mean by *difficult hillsides*?

Ethel: I think they were so steep it was difficult to climb them.

Teacher: That is a good explanation. Where had the stream come from that flowed through the valley?

Mary: From high up among the mountains.

Teacher: How was it *tamed*?

Henry: Men made it turn mill wheels.

Teacher: What did the people in this valley do?

John: Some were farmers, some worked in cotton mills, and there must have been some saw mills where logs were sawed into boards.

Teacher: What did all of these people have to enjoy?

Ethel: The scenery and especially the Great Stone Face.

Teacher: Why could some people see the features of the Face more perfectly than others?

Mary: I think people who love rocks and trees and such things would be able to see the face better than others.

John: If one had a good imagination, it would help him to see the face better.

Teacher: Those are both good answers. Now let us read what the face looked like. (Some one reads.)

Teacher: Who will tell in his own words the meaning of the first long sentence in that description?

Henry: I think it means that this face looks as though Mother Nature one day wanted to play, so she threw some great rocks together and made them look like a face.

Teacher: Good. Who were the Titans? Maybe you have never heard of them. The Greeks thought of Heaven and Earth as parents and told stories of the giants who were children of this strange pair. These children were called Titans. Anything very large is often called *Titanic.*

Teacher: (Drawing a profile of a face on the blackboard.) How high was the forehead of the Great Stone Face?

John: A hundred feet.

Teacher: Do you think of anything near here that is 100 feet high?

Ethel: The flag staff in the public square.

Teacher: Good. Can you imagine the forehead of this stone face to be as high as that flag staff? Show me the bridge of the nose. About what part of one's profile is the forehead?

Mary: About one-third.

Teacher: Then how long must the whole of the Great Stone Face have been?

Henry: About 300 feet.

Teacher: What effect had the clouds about the Face?

Edith: They softened it and made it seem alive.

Teacher: Read on, Henry.

Teacher: What are we told about the expression of this Face?

Kate: It was *grand and sweet.* It made me think the owner of the face must have a kind heart.

Teacher: Can we tell by merely looking at people, something of their natures?

John: Yes. You can most always tell a bad person by the look in his eyes or about his mouth. You can tell a good one in the same way, only the two won't look alike.

Teacher: Why was it an education to look at the Great Stone Face?

Mary: Looking at good things makes us think good thoughts.

Teacher: Good. What did the people in the valley think the Face did for them?

Henry: They thought it made the soil fertile.

Teacher: Continue the story, Edith. (She reads.) What kind of a cottage had the child and his mother?

Mary: Probably a log one.

Teacher: Do you think the child already loved the Great Face on the mountain side? Why?

Kate: He thought it a *kindly* face and he seemed to enjoy looking at it.

Teacher: What is a prophecy?

Henry: It is something which some one thinks will come to pass some day.

Teacher: Let us read now about the prophecy concerning this face on the mountain side. (The class read the next three paragraphs.) Do you think it would be possible for one person to grow to resemble another?

Ethel: I have heard that if one person loved another very dearly, and lived with him continually he would grow to look like the other.

Teacher: I have heard of that, too. If it is true, do you think one might come to look like that stone face?

John: Yes, if he looked at the face often and cared for it.

Teacher: We shall see if the old prophecy were fulfilled. Read on, Kate. How did this little lad grow up, Henry?

Henry: He lived quietly with his mother and helped her all he could.

Teacher: What is a pensive child?

Mary: A thoughtful child.

Teacher: Good. What would we say instead of *unobtrusive boy?*

Edith: I think I would say, he did not trouble any one by getting in his way.

Teacher: You have the right idea. Who taught this boy?

John: The Great Stone Face.

Teacher: What do you think the Face taught Ernest?

Mary: To be kind, obedient, cheerful and loving.

Teacher: How did the face appear to Ernest?

Edith: He thought it smiled upon him when he had done something good, or when he was discouraged.

Teacher: Do you think Ernest loved the Great Face now?

John: Yes, because he looked at it so much and thought about it so often.

Teacher: What great hopes had Ernest?

Edith: He hoped he would some day see the man who looked like the Face.

Teacher: This was a long, rather hard lesson, but you have done very well with it. Tomorrow we shall see what interesting events occurred in the valley in which Ernest and his mother lived. We will read through the description of Mr. Gathergold, to the line, "He will come! Fear not, Ernest; the man will come!" Tomorrow I shall like to have you give me descriptions of the valley, the Great Stone Face, and of Ernest, as you remember them.

The following lessons should be developed in the same way as the first. The children's attention should be called to vivid description of Mr. Gathergold, his appropriate name, his face, his hands. The wrinkles in his face suggest a shriveled soul; the color of his skin, his thin lips and the manner in which they were closed help to tell the story of the man's life. Notice the humor in the suggested nickname, *Scattercopper.* Have the pupils describe the mansion this man built. Ask the pupils how Ernest felt when he saw this man. Was he disappointed? Discouraged? What comforted him? Why did people think that this rich man resembled the Great Stone Face?

In connection with the next great man in the story, note how his name suggests his character. Ask the pupils what they think of *Rev. D. Battleblast* for the name of a minister. Is it appropriate? Why did Hawthorne use it? Ask the class to describe the feast given Old Blood and Thunder. Why did the village people think he looked like the Great Stone Face? Describe his appearance. How did Ernest feel when he looked upon this man? What did the Great Stone Face seem to say to Ernest that night? How did the face look? How old was Ernest now? What kind of a man had he become? Why?

Have the pupils describe Old Stony Phiz. Ask if he were well named and why. Why did people at first think him so wonderful? Describe his reception. How did people show their enthusiasm over this man? What did Ernest fail to find in this man's face? How did Ernest feel? What comforted him?

Why did learned men come to talk with Ernest? What kind of a man was he at the end of all these years? Describe his appearance. Would you like to have known him?

Who was the Poet? What had he done? Call the pupils' attention to the sentences: "The Creator had bestowed him, as the last best touch to his own handiwork. Creation was not finished till the poet came to interpret, and so complete it." Ask the pupils if they think the poet really did help to complete the world. Lead them to see humor in these lines. This was the opinion the people held of the poet. How did Ernest first get acquainted with this man? Was Ernest satisfied with the poet's personality? Why?

What did Ernest do each evening? Where did he preach? Notice the description of Ernest's pulpit. Lead the class to make a mental picture of that scene. What affected the poet? Why do you think he saw Ernest's likeness to the Great Stone Face before those with whom Ernest had always lived noticed it? Do you think the poet was right in thinking Ernest looked like the Great Face? Why?

Do you like this story? What does it teach you of Hawthorne?

Have a review lesson and let each pupil read the description or the part of the story he likes best.

NOVEMBER

Selections from the reader. Study fully the *Courtship of Miles Standish.* Associate with this its history and geography. Consult Coffin's *Old Times in the Colonies.* (See Type Study on the *Puritans*, Vol. V, page 221.)

Read Mrs. Hemans' *Landing of the Pilgrims.*

DECEMBER

Dickens' *Christmas Carol.* Make a study of the life of Dickens.

Use other Christmas stories for silent reading.

JANUARY

Begin the reading of *Evangeline;* connect with the history and geography. Study the life of Longfellow.

Read the *Last of the Mohicans* for silent work.

FEBRUARY

Complete the study of *Evangeline.*

Selections from the reader.

Discuss *The Last of the Mohicans.*

MARCH

Select stories from *Tales of the White Hills.*

Read the King Arthur stories.

Selections from *Grandfather's Chair.*

APRIL

Study *The Legend of Sleepy Hollow.* Study the Life of Irving.

The study of Dolph Heyliger for silent reading.

Short selections from the reader.

MAY

Read *Rip Van Winkle. Rebecca of Sunny Brook Farm* for silent reading.

JUNE

Complete *Rip Van Winkle.*

Selections from the reader.

Knickerbocker History of New York and Irving's *Life of Washington.*

EIGHTH YEAR

SEPTEMBER

Read selections from Holmes, as *Grandmother's Story of Bunker Hill; The One Hoss Shay:*

> Have you heard of the wonderful one-hoss shay,
> That was built in such a logical way
> It ran a hundred years to a day,
> And then, of a sudden, it—ah, but stay,
> I'll tell you what happened without delay,
> Scaring the parson into fits,
> Frightening people out of their wits,—
> Have you ever heard of that, I say?

Seventeen hundred and fifty-five
Georgius Secundus was then alive,—
Snuffy old drone from the German hive;
That was the year when Lisbon-town
Saw the earth open and gulp her down,
And Braddock's army was done so brown,
Left without a scalp to its crown.
It was on the terrible Earthquake-day
That the Deacon finished the one-hoss shay.

Now in building of chaises, I tell you what,
There is always *somewhere* a weakest spot,—
In hub, tire, felloe, in spring or thill,
In panel, or crossbar, or floor, or sill,
In screw, bolt, thoroughbrace,—lurking still,
Find it somewhere you must and will,—
Above or below, within or without,—
And that's the reason, beyond a doubt,
That a chaise *breaks down*, but doesn't *wear out.*

But the Deacon swore (as Deacons do,
With an "I dew vum," or an "I tell *yeou*"),
He would build one shay to beat the taown
'n' the keounty 'n' all the kentry raoun';
It should be so built that it couldn't break daown;
"Fur," said the Deacon, "' Tis mighty plain
That the weakes' place mus' stan' the strain;
'n' the way t' fix it, uz I maintain,
    Is only jist
T' make that place uz strong uz the rest."

So the Deacon inquired of the village folk
Where he could find the strongest oak,
That couldn't be split nor bent nor broke,—
That was for spokes and floor and sills;
He sent for lancewood to make the thills;
The cross bars were ash, from the straightest trees,
The panels of white-wood, that cuts like cheese,
But lasts like iron for things like these;
The hubs of logs from the "Settler's ellum,"—
Last of its timber,—they couldn't sell 'em,
Never an axe had seen their chips,
And the wedges flew from between their lips,
Their blunt ends frizzled like celery-tips;

Step and prop-iron, bolt and screw,
Spring, tire, axle, and linchpin too,
Steel of the finest, bright and blue;
Thoroughbrace bison-skin, thick and wide;
Boot, top, dasher, from tough old hide
Found in the pit when the tanner died.
That was the way he "put her through."
"There!" said the Deacon, "Naow she'll dew!"

Do! I tell you, I rather guess
She was a wonder, and nothing less.
Colts grew horses, beards turned gray,
Deacon and deaconess dropped away,
Children and grandchildren—where were they?
But there stood the stout old one-hoss shay
As fresh as on Lisbon-earthquake-day!

EIGHTEEN HUNDRED;—it came and found
The Deacon's masterpiece strong and sound.
Eighteen hundred increased by ten;—
"Hahnsum kerridge" they called it then.
Eighteen hundred and twenty came;—
Running as usual; much the same.
Thirty and forty at last arrive,
And then came fifty, and FIFTY-FIVE.

Little of all we value here
Wakes on the morn of its hundredth year
Without both feeling and looking queer.
In fact, there's nothing that keeps its youth,
So far as I know, but a tree and truth.
(This is a moral that runs at large;
Take it.—You're welcome.—No extra charge.)

FIRST OF NOVEMBER,—the Earthquake-day—
There are traces of age in the one-hoss shay,
A general flavor of mild decay,
But nothing local, as one may say.
There couldn't be,—for the Deacon's art
Had made it so like in every part
That there wasn't a chance for one to start.
For the wheels were just as strong as the thills,
And the floor was just as strong as the sills,
And the panels just as strong as the floor,

And the whipple-tree neither less nor more,
And the back-crossbar as strong as the fore,
And spring and axle and hub *encore*.
And yet, *as a whole*, it is past a doubt,
In another hour it will be *worn out!*

First of November, 'Fifty-five!
This morning the parson takes a drive.
Now, small boys, get out of the way!
Here comes the wonderful one-hoss shay,
Drawn by a rat-tailed, ewe-necked bay.
"Huddup!" said the parson.—Off went they.
The parson was working his Sunday's text,—
Had got to *fifthly*, and stopped perplexed
At what the—Moses—was coming next.
All at once the horse stood still,
Close by the meet'n'-house on the hill.
—First a shiver, and then a thrill,
Then something decidedly like a spill,—
And the parson was sitting upon a rock,
At half past nine by the meet'n'-house clock,—
Just the hour of the Earthquake shock!
—What do you think the parson found,
When he got up and stared around?
The poor old chaise in a heap or mount,
As if it had been to the mill and ground!
You see, of course, if you're not a dunce,
How it went to pieces all at once,—
All at once, and nothing first,—
Just as bubbles do when they burst.

End of the wonderful one-hoss shay.
Logic is logic. That's all I say.

OCTOBER

Selections from the reader.
Warner's *A Hunting of the Deer.*
Readings from Franklin's *Autobiography.*

NOVEMBER

The Vision of Sir Launfal; connect with other stories of King Arthur.
Other poems of Lowell.
Readings from the *Odyssey.*

DECEMBER

Sohrab and Rustum.
Silas Marner for silent reading.
Read Schurz' *Essay on Lincoln.*

JANUARY

Lady of the Lake begun. Study of the life of Scott.
Read *Rob Roy* as silent reading.

FEBRUARY

Lady of the Lake completed.
Lochinvar and Scott's shorter poems.

The prologue to *Lochinvar* follows:

> Oh! young Lochinvar is come out of the west.
> Through all the wide Border his steed was the best;
> And save his good broadsword he weapons had none.
> He rode all unarmed and he rode all alone.
> So faithful in love and so dauntless in war,
> There never was knight like the young Lochinvar.
>
> He stayed not for brake and he stopped not for stone,
> He swam the Eske river where ford there was none,
> But ere he alighted at Netherby gate
> The bride had consented, the gallant came late:
> For a laggard in love and a dastard in war
> Was to wed the fair Ellen of brave Lochinvar.
>
> So boldly he entered the Netherby Hall,
> Among bridesmen, and kinsmen, and brothers, and all:
> Then spoke the bride's father, his hand on his sword,—
> For the poor craven bridegroom said never a word,—
> "Oh! come ye in peace here, or come ye in war,
> Or to dance at our bridal, young Lord Lochinvar?"—
>
> 'I long wooed your daughter, my suit you denied;
> Love swells like the Solway, but ebbs like its tide—
> And now am I come, with this lost love of mine,
> To lead but one measure, drink one cup of wine.
> There are maidens in Scotland more lovely by far,
> That would gladly be bride to the young Lochinvar.'

The bride kissed the goblet; the knight took it up,
He quaffed off the wine, and he threw down the cup.
She looked down to blush, and she looked up to sigh,
With a smile on her lips and a tear in her eye.
He took her soft hand ere her mother could bar,—
"Now tread we a measure!" said young Lochinvar.

So stately his form, and so lovely her face,
That never a hall such a galliard did grace;
While her mother did fret, and her father did fume,
And the bridegroom stood dangling his bonnet and plume;
And the bride-maidens whispered "Twere better by far
To have matched our fair cousin with young Lochinvar."

One touch to her hand and one word in her ear,
When they reached the hall-door, and the charger stood near;
So light to the croupe the fair lady he swung,
So light to the saddle before her he sprung!
"She is won! we are gone, over bank, bush, and scaur;
They'll have fleet steeds that follow," quoth young Lochinvar

There was mounting 'mong Graemes of the Netherby clan;
Forsters, Fenwicks, and Musgraves, they rode and they ran:
There was racing and chasing on Cannobie Leel
But the lost bride of Netherby ne'er did they see.
So daring in love and so dauntless in war,
Have ye e'er heard of gallant like young Lochinvar?

SOLDIER, REST! THY WARFARE O'ER

Soldier, rest! thy warfare o'er,
  Sleep the sleep that knows not breaking;
Dream of battled fields no more,
  Days of danger, nights of waking.
In our isle's enchanted hall,
  Hands unseen thy couch are strewing,
Fairy strains of music fall,
  Every sense in slumber dewing.
Soldier, rest! thy warfare o'er,
Dream of fighting fields no more;
Sleep the sleep that knows not breaking,
Morn of toil, nor night of waking.

No rude sound shall reach thine ear,
  Armor's clang, or war-steed champing,
Trump nor pibroch summon here
  Mustering clan or squadron tramping.
Yet the lark's shrill fife may come
  At the daybreak from the fallow,
And the bittern sound his drum,
  Booming from the sedgy shallow.
Ruder sounds shall none be near,
Guards nor warders challenge here,
Here's no war-steed's neigh and champing,
Shouting clans or squadrons stamping.

Huntsman, rest! thy chase is done;
  While our slumbrous spells assail ye,
Dream not, with the rising sun,
  Bugles here shall sound reveillé.
Sleep! the deer is in his den;
  Sleep! thy hounds are by thee lying:
Sleep! nor dream in yonder glen
  How thy gallant steed lay dying.
Huntsman, rest! thy chase is done;
Think not of the rising sun,
For at dawning to assail ye
Here no bugles sound reveillé.

REBECCA'S HYMN

When Israel of the Lord beloved
  Out from the land of bondage came,
Her fathers' God before her moved,
  An awful guide in smoke and flame.
By day, along the astonished lands
  The cloudy pillar glided slow;
By night, Arabia's crimsoned sands
  Returned the fiery column's glow.

There rose the choral hymn of praise,
  And trump and timbrel answered keen
And Zion's daughters poured their lays,
  With priest's and warrior's voice between.
No portents now our foes amaze,
  Forsaken Israel wanders lone:
Our fathers would not know Thy ways,
  And Thou hast left them to their own.

But present still, though now unseen,
  When brightly shines the prosperous day,
Be thoughts of Thee a cloudy screen
  To temper the deceitful ray!
And O, when stoops on Judah's path
  In shade and storm the frequent night,
Be Thou long-suffering, slow to wrath,
  A burning and a shining light!

Our harps we left by Babel's streams:
  The tyrant's jest, the Gentile's scorn;
No censer round our altar beams,
  And mute are timbrel, harp, and horn,
But Thou hast said, The blood of goat,
  The flesh of rams I will not prize;
A contrite heart, a humble thought,
  Are Mine accepted sacrifice.

MARCH

The *Merchant of Venice* begun.
Ivanhoe for silent reading.
Give dramatic rendering of scenes from *Merchant of Venice.*

APRIL

Complete *Merchant of Venice.*
Short selections from the reader.
Quentin Durward for silent reading.

MAY

Short selections from the reader.
Readings from *David Copperfield.*
Lorna Doone for silent reading.

JUNE

Julius Caesar.
Life of Shakespeare; times of Elizabeth.
Webster's Speech on *Jefferson and Adams.*

CHAPTER FOUR

LANGUAGE

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LANGUAGE AND COMPOSITION

1. Value. Language is the most useful of all forms of expression, and the power to express adequately one's thought and feeling constitutes, in large measure, the superiority of one individual over another. Back of expression lies thought, which is possible only with the help of words. Hence intelligence clearly depends upon the mastery of language. Deaf mutes look out on the same world as other persons, but it does not have the same meaning for them. The English language is a means of expression employed not only by some of the most enlightened people on the earth, but by about one hundred forty millions scattered over the entire globe. It is rich in literature and is one of the most flexible of all languages. For these reasons, the study of English is the most important branch taught in the schools.

2. Relation to Other Branches. The different branches of the curriculum are more or less closely related to each other, but language sustains a vital relation to all, and the teaching of language forms a part of the teaching of every subject. While the saying, "Every lesson a language lesson," has often been taken too literally, it should not for this reason be wholly set aside. Every lesson should be a language lesson to the extent that the pupil should be required to think out in a clear and orderly way what he wishes to say and to express himself in good English. Moreover, as language teaching forms a part of the teaching of every other subject, so the teaching of every subject forms a part of the language teaching. The progress of the language work depends to a large degree upon the skill with which other branches are handled. "Good language work cannot spring out of subjects poorly taught."

3. Language and Reading. Language and reading are different parts of a course pursued for a single purpose — to give the pupil a good command of English. In the chapters on reading, the sections upon thought-getting and thought-giving through speech are emphasized. In this and the following chapter stress is laid upon composition both oral and written. You should remember, therefore, that all that has been said in Chapters I, II and III about the study of words, the getting of meaning and the use of figures of speech, applies with equal propriety to the work in language. Because of the discussion of those subjects in the preceding chapters, their treatment here is unnecessary. You should, therefore, refer to the various sections of the chapters on reading whenever they will assist in developing the suggestions given in the chapters on composition and grammar.

In order, however, that you may not be left in doubt as to the manner of relating reading and language lessons, the following suggestions for language work upon *The King of the Golden River* are given. (See page 80, Section 21.)

(1) Write a description of Treasure Valley.

(2) Write or give orally a character sketch of Gluck, comparing him with his brothers.

(3) Describe Gluck's trip to the Golden River.

(4) From the quotation, "A good deed is never lost; he who sows courtesy reaps friendship, and he who plants kindness gathers love," let each pupil write a story of his own experience, telling about some good that came to him from being kind and unselfish. If writing from experience is too difficult, let each write from some story which he has read.

In these exercises, insist upon carefully constructed sentences and upon correct spelling, capitalization and punctuation in the written exercises. As suggested in Chapter III, this work is suitable for the sixth grade.[1]

4. Conditions and Difficulties. The results of language teaching are often far from satisfactory. So many influences are at work upon a pupil to form his language that the little the teacher can do is often insufficient to correct his errors. Home surroundings, playmates, and literature, often of cheap character, all tend to cultivate language habits quite contrary to those of which the school can approve. Let us look briefly at the chief difficulties with which the teacher has to contend.

(a) EARLY HABITS OF SPEECH. We all learn language from imitation, and before children enter school they naturally acquire forms and habits of speech common to the family and to their playmates. At five or six years of age, therefore, certain language habits are firmly fixed. If these are right, the foundation for language is well established. If they are wrong, they constitute an obstruction to correct modes of expression which it is exceedingly difficult to remove. When bad habits of speech have been formed they can be overcome only by establishing correct habits in their place. This is a difficult task, even when the school can secure the coöperation of the home and the community.

(b) THE FOREIGN ELEMENT. There are added to our population yearly thousands of people from foreign lands. Only a small percentage of these come from English-speaking countries, and where these immigrants settle in large numbers the schools have the double task of teaching the content as well as the form of our language to the children. In many places this task is exceedingly difficult, because outside the school the children of these immigrants seldom hear English spoken or have the opportunity to use it.

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[1] From Miss Orpha Timmons, teacher in the eighth grade, public schools, Seattle, Washington.

The method of assisting children of foreign parentage to acquire the pronunciation of English words is given on page 31, in Section 4. Additional to the difficulty of pronunciation is the use of idioms. In translating into English, these children will at first use the idioms of their own language. Thus, a French child, instead of saying, "I am ill," will say, "I have illness." Some drill upon idioms will be necessary.

(c) SENTIMENT. Those who have not been accustomed to use or to hear correct language frequently look upon one who is attempting to reform his speech as a person who is "putting on airs." This is particularly characteristic of boys between the ages of ten and fourteen, and it requires a good deal of moral courage in a boy to withstand this sentiment when mingling with other boys. However, the teacher who can create a strong school sentiment in favor of correct speech will, in a great measure, overcome this difficulty.

5. Purposes of Language Teaching. The chief purposes of language teaching are to train pupils to think and to communicate their ideas effectively to others. Composition exercises provide the best opportunity of the school for enabling pupils to organize and use the whole range of their life experiences and ideals. These purposes will be more likely to be realized if the teacher bears in mind the various aspects of the language work. This will enable her to place emphasis upon one aspect at a time, while giving sufficient attention to all other aspects as occasion may demand. The principal aspects are the following:

(a) SECURING A VOCABULARY. "Words are the tools with which we think," and many words are necessary for full and free expression of one's thought. The pupil's vocabulary is increased by the addition of new words and by giving new or more exact meaning to words which he already knows. When a child first learns the word *orient*, it is doubtless associated with the countries found on the eastern coast of Asia and means that part of the world; but later he learns that *orient* has another meaning, namely, to arrange according to the first principles of a subject or a science. When he has learned this, the word has for him a richer content and a broader use. The wise teacher will employ both of these means for enlarging the pupil's vocabulary. It is a good plan occasionally to ask the pupils to make you a list of all the new words they have learned during the past week or month.

Caution. The forms of new words should be taught only after the meaning is comprehended to some degree by the pupils, and occasions for using the new words should be sought until the child becomes thoroughly acquainted with them and incorporates them into his vocabulary. Words which belong to maturer years should not be taught until the time for them is ripe.

(b) Correcting Errors. Errors of speech are of two kinds, those due to insufficient vocabulary and those due to the use of incorrect forms or bad habits of speech, as explained in Section 4. Errors of the first class are easily corrected by supplying the deficiency in the child's vocabulary. Those of the second class are of such nature as to require a more extended reference to the sections that follow.

(c) Securing Adequate Oral Expression. Thought and expression react upon and strengthen each other. One's working vocabulary comprises those words and those only which one can use with fluency and accuracy; therefore, every pupil should be trained in oral expression until he can give an intelligible account of any subject that he has studied. Observe the child's oral expression and you will see the necessity for training on the following points:

(1) *Involved sentences.* The child's first difficulty is in the use of long sentences whose parts are loosely joined by connectives. Train him to use short sentences, and many of his difficulties are conquered. Do not fear that this will cause a jerky style, for the child's tendency to join short sentences will cause him to form enough long ones to prevent this fault.

(2) *Superfluous words.* There is a strong tendency to use unnecessary words, and this increases as the child advances from grade to grade. Dwell upon the beauty and force of concise speech, and show how wordy expressions can be improved.

(3) *Simple sentences.* The simple sentence lies at the foundation of all sentence construction. It is therefore important that the child learn as early as possible to construct accurate, simple sentences. Concerning this, an excellent authority says: "If the child forms a habit of always having a subject and predicate, and that subject and predicate in agreement, he has formed a habit of accuracy and can handle complications when the time comes."

(d) SECURING ADEQUATE WRITTEN EXPRESSION. The written lesson logically follows the oral, and each is a help to the other. Many pupils who can recite well orally fail when required to commit their thoughts to writing, because they have not had sufficient practice in this mode of expression. Written composition involves many arbitrary conventions, and the attempt to observe these absorbs the child's attention. Therefore, a child should have his ideas well in mind before he begins to write. The points mentioned under (c) apply as well to written work.

(e) INTERPRETING LITERATURE. No language work is complete which does not bring the pupil in touch with the best of traditional literature — folk lore, myth, and epic — and with the works of standard British and American authors, and which does not assist him to secure the power of interpreting these works. For detailed plans, see Chapter III.

(f) ACQUIRING A KNOWLEDGE OF PRINCIPLES AND RULES. The principles of composition and of grammar will assist the pupil in establishing standards of accuracy, and before completing his language work he should have a knowledge of them.

GENERAL PLAN OF WORK

6. Explanatory. The plan of work in this chapter is based upon the supposition that the pupils have had three years of language work. This means that they can read in the third reader; that they can tell simple stories and give short accounts of their own experiences, and that they can write simple sentences; that they have learned the use of the period and the interrogation point; and that from their entrance into school they have received drill for the purpose of correcting their errors in speech. Whatever is lacking in this supposed preparation will need to be supplied before the lines of work here suggested can be successfully followed.

7. Unity. The plan adopted for language work should be suitable for all grades. There should be consistency in plan, and harmony in purpose. The object should be to establish an appreciation of good English and a distaste for incorrect English, and to foster the habit not only of speaking correctly, but of seeking, through the dictionary and other sources, to know what is correct. The changes in such a plan as the work proceeds will consist in its enlargement by the adding of more detail and by the advancing of the grade of work to meet the requirements of the class. The work should begin where that of the previous grade leaves off, and should use and strengthen all the knowledge of principles and power of expression which the pupil has acquired.

It is essential that the teacher keep close to the heart of the pupil. Teaching language to children is helping them to express what they think and feel as children. The mistake is too often made of trying to lead them to express themselves as grown men and women. The language course is organized for the purpose of enabling the child to grow naturally and healthfully into the youth and the man.

8. Material. The sources upon which the child draws for his growth in language are his everyday experiences, his imagination, and books. The first source includes his contact with home life, with his friends and playfellows, and his daily lessons in school. The third source is at first limited to those books (not text-books) and periodicals which the child can read and enjoy. As he extends his education, this source increases until finally it becomes of great importance. In the intermediate grades the everyday experiences and lessons and the imagination should constitute the chief sources of material for the language work. Special lessons on pictures, plays, objects and other subjects can occasionally be given for the sake of variety.

9. Language Books. In many schools language books are introduced in the fourth grade, and above this grade they are found in nearly all schools. When a language book is found in the fourth grade, the teacher must make the best use of it that she can, but a good language teacher will generally secure better results in this grade without the use of a special text-book. In rural schools, where the teacher has a large number of recitations, the text-book is valuable because it saves time in preparing material for language lessons. In the higher grades it is a good guide, and its use causes emphasis to be placed on the phases of the work which require special attention. The language book should be considered as a guide, but it should not be entirely relied upon for furnishing the material for language lessons. Before using a text-book in language, the teacher should become acquainted with its scope, plan and purpose.

10. Oral Composition. The word *composition* has been narrowed in its application until to most teachers and probably to all pupils it means a formal written exercise upon some chosen topic. Composition, however, has a much broader meaning. It includes all expression through language, and, of this, oral expression constitutes by far the greater portion. In the primary and intermediate grades too little attention is given to oral composition. On page 178, in Section 10, attention has been called to the importance of oral instruction. It is of equal or greater importance that the teacher give careful attention to oral composition by her pupils.

> As are the child's habits of oral expression, so will his habits of written expression tend to become — or in other words, his written language and the structure of his written work will be pre-determined by his previously acquired oral habit and practice.

Again, very few young people on leaving school are able to think consecutively, to give a continuous logical account of what they have seen or heard or to converse in company in an easy and interesting style. In nearly all cases these failings are due to neglect of training in oral expression in the intermediate and grammar grades, notwithstanding the fact that the lessons in reading, geography, history and elementary science afford an abundance of material for oral narration, description and explanation and that those in arithmetic and language afford the pupils ample opportunity for practice in concise and exact expression.

The greatest care should be exercised over oral recitations. The pupils should be encouraged to talk about that in which they are interested. All incorrect words and phrases should be noted by the teacher, and the pupil should be required to re-phrase and repeat correctly such parts of his oral composition as are incorrect or inelegant. The teacher should reward an unusually good expression with approval.

11. How to Proceed. If these results are to be secured, the following points should be observed:

(a) ASSIGNMENT OF THE LESSON. One of the chief purposes of the assignment is to point out definitely what the pupil is to do; make him feel that it is worth doing, and to remove such obstructions as will take his thought from the main purpose of the lesson.

[1] Chubb: *The Teaching of English.*

Clear and connected thought is essential to good oral composition, and it is the teacher's first duty to place the pupil in position to secure this in his preparation. Each minute spent in careful assignment of work may save misunderstandings that it would take many minutes to detect and clear up. Tell the pupils just what you expect them to prepare, then hold them responsible for the work.

Caution. Practice constitutes the greater part of the work of the language class in preparing the lesson, and since all natural expression comes in response to thought and feeling, the lesson assigned must be upon topics or things that stimulate thought and feeling in the pupils.

Such assignments as "Write five sentences, each containing an adjective and an adverb," and exercises of the same nature, work infinitely more harm than good. It is a wise plan not to ask a child to write upon a topic until questioned about it orally; if he shows an anxiety to tell what he knows, he will like the writing.

(b) THE TEACHER'S EXAMPLE. The teacher should exercise great care in preparing and presenting her lessons. Her language should be simple and direct, her illustrations interesting and pointed, and her manner animated. If the teacher's presentations are of such nature that the pupils become imbued with her zeal and enthusiasm, she will have no trouble in securing their best efforts in oral composition.

(c) WORD STUDY. This subject has been so fully treated on pages 6-10, in Sections 9-13, that no extended comment upon it is here necessary. While the plan there presented is associated directly with reading, it applies equally well to the study of all other branches. In the preparation of each lesson the pupils should look up the meaning and use of all new words. In assigning lessons to pupils in the fourth and fifth grades, attention should be called to these words when the assignment is made, and if the pupils need assistance upon them, it should be given at this time.

(d) THE RECITATION. From the beginning, the pupils should be required to recite topically. The children thus acquire the habit of arranging and expressing their thoughts with some degree of independence and originality, two essentials in oral and written composition. The habit of systematizing the thoughts centering about a topic is also promoted, and a greater interest in study is awakened.

(e) CRITICISM BY CLASS. The pupil cannot give the fullest and freest expression to his thoughts when his attention is turned aside; therefore, to allow pupils to interrupt the one reciting or to distract his attention by a constant waving of hands is fatal to good results in oral composition. A pupil should seldom be interrupted. After he has said all he can upon the topic, the class may be given opportunity to supply omissions and correct errors of fact or of language. Criticisms by the class should be carefully guarded, for many classes are allowed to drift into habits of criticism that are highly injurious, not only to the work but to the character of the pupils as well. The subject under discussion, not the pupil, should be criticized. Teach the pupils to say, "I think so and so would be better, because so and so"; not "he said so and so." Criticisms should always be impersonal, whether made by the pupil or the teacher. Personal criticism gives offense and causes discouragement. A pupil can scarcely be expected to enter into a discussion about himself, but he will enter into a discussion about a statement or an expression which he has used. If good oral composition is to be secured, whatever tends to cause embarrassment or to distract the thought must be removed.

(f) CRITICISM BY THE TEACHER. The teacher's best language work is that done while teaching the various branches which her pupils pursue. If the pupil's recitation is supplemented by questions which call his attention to the wrong use of words, to ungrammatical and unfinished sentences, to indistinct enunciation and faults in pronunciation, as well as to misstatements and omissions, he is receiving a stimulus to clearer thinking and to more accurate and fluent expression. The greater part of the criticism should then be given by the teacher.

But just here caution is necessary. Most children are extremely sensitive about their faults, and the teacher needs to exercise tact and patience in dealing with the child's bad habits of speech. One cannot expect to correct all errors at once, and if the errors are numerous it is seldom wise to call attention to many at first. Begin with those that are most vital, then take up the others, one at a time, as fast as the pupil can profit by the additional criticism. The correction of errors that are common to the class should form a part of the special work in language. Spontaneity cannot be secured unless the teacher is willing to allow the child to express himself as a child. Concerning this point, one of our best authorities on the teaching of English says:

> Teachers must bring to the literary work of children a breadth of tolerance and tact that is bred of sympathy with their vague strivings and subtle intentions, which alone can tell them when to insist on precision and when to admit a reaching out after the bold effects of suggestive speech — speech that is to be gauged not by scientific but by poetic standards.[1]

As long as boys and girls are thoughtful and are putting their best efforts into their work, we must tolerate their forms of expression. All honest effort should be met with approval, whether or not the results are satisfactory; but the pupil must be led to see clearly that the approval is placed upon the effort, not upon the result. A little encouragement stimulates him to try again and again, until the desired result is finally reached. Lean towards the optimistic. Always make your criticisms constructive, not destructive. Take the best that the child can give and build upon that. By so doing you will keep interest alive and prevent a dislike for language and grammar.

12. Written Composition. Every recitation should be devoted in part to expression in some suitable form by the pupils, but the interest will center in the content. The expression must be natural, original and unstilted by fear of criticism. The danger is that teachers will neglect written composition or will be satisfied with mediocre work.

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[1] Chubb: *The Teaching of English.*

Every exercise of the day will require expression in some form, and every suitable occasion should be employed to get written composition. Formal compositions on uncorrelated topics are apt to be irksome, through lack of interest. The topics treated in other studies will usually furnish the most suitable material for written expression. The word *composition* should seldom be used. Pupils do not dislike written exercises when they are used as a form of recitation, but in all grades they dislike writing formal compositions.

As a phase of the language work, the written exercise is of great importance, but it requires careful supervision if the pupils are to derive the most benefit from it.

13. Points to Be Observed. All written exercises should have a definite aim, and in their supervision the teacher should give special attention to the following points:

(a) QUANTITY OF WORK. Teachers frequently err in requiring too much written work, especially in the intermediate grades. Too many exercises are assigned, or the exercises are too long. Pupils in the fourth grade are easily fatigued by writing, therefore their exercises should be short, not exceeding twenty minutes or a half hour, and the assignment should be such that they can finish the task in the allotted time, without hurrying. When fatigued, the pupils are not in condition to do their best, and if the exercise is prolonged beyond this point, much careless and slovenly work is produced.

(b) FORM. The mechanical features of written work are difficult to master and must have sufficient attention. Penmanship, neatness, correct spelling, appropriate arrangement of the subject-matter, indentation of paragraphs, the form and structure of sentences and the use of capitals and the marks of punctuation should all become fixed habits. Many class drills on all these points are necessary to enable the pupils to meet the requirements. It is often a good plan to call the attention of the class to the errors most frequently made and to place upon the board new words which the pupils are liable to misspell. If the exercise consists of several paragraphs, a brief outline or a few questions will help in guiding the thought. By occasional coöperative exercises with the teacher at the blackboard, pupils should be led to see that each topic in an outline calls for a paragraph. By insisting upon this, paragraphing becomes a habit almost unconsciously.

The purpose of written exercise in the intermediate grades consists in training the pupil to express himself accurately and logically in writing. It is much easier to prevent the formation of erroneous habits than it is to eradicate them after they are formed; therefore, until the pupil's habits of expression are fixed, all possible means should be used to keep him from falling into error. To this end a small number of written exercises carefully planned and supervised will accomplish much more than a large number in which the pupils have little or no attention.

At the outset you should adopt a definite plan, in accordance with which all written work should be arranged. In the fourth grade only the larger divisions, and possibly some of the subdivisions, should be used. As the class advances in ability, the details of the plan can be elaborated. The following form is suitable for the beginning of all exercises:

(Name) (Date)
(Title)

In a graded school it may be desirable to place on the paper the grade to which the pupil belongs. The form would then be modified thus:

(Name) (Date)
(Grade)
(Title)

In writing the body of the exercise, observe the following directions:

(1) Leave the line below the title vacant.

(2) Leave a margin of an inch on both sides of the page and a corresponding margin at the bottom.

(3) Begin the first line of each paragraph one and one-half inches from the left-hand edge of the page.

(4) Observe all the rules you have learned for writing capital letters.

(5) Observe all the rules you have learned for punctuation.

(6) Write on one side of the paper only.

A paper begun according to the above directions would appear thus:

Mary Allen May 20, 1916.
Fifth Grade

THE BLUE VIOLET

The blue violet is one of our sweetest and prettiest spring flowers, etc.

It is not so important that you follow *this* form as it is that you follow *a* form, and that the form adopted be adhered to on all occasions until it becomes fixed in the minds of the pupils. In beginning an exercise with young pupils, it is a good plan to preface the writing with such questions as, "What words shall we begin with capitals?" "What punctuation mark shall we use at the end of a sentence?" "Do we know the use of any other punctuation marks?" These questions will enable the pupils to recall vividly what they have learned upon the points and thus prevent a number of errors. The following rules are worthy of careful consideration:

(1) Never write until you have something to write about.

(2) Follow the general directions for writing in all written work.

(3) Begin each sentence with a capital letter.

(4) End each sentence with the proper mark of punctuation.

(5) Begin the names of all persons and places with capital letters.

(6) Write all numbers, excepting dates, in words.

(7) Use only those words whose meaning you know.

(8) Use short sentences.

(9) Use but few connectives.

(10) Avoid repetition.

(11) Be sure you know the spelling of a word before you write it.

(12) Do not divide a syllable at the end of a line.

(13) Head only the first page.

(14) Number the other pages with small figures in the middle of the first space.

(15) Be neat. Only the best writing of which you are capable will be accepted.[1]

(c) FREEDOM OF EXPRESSION. We are often surprised at the almost total failure in the written work of pupils who in oral recitation acquit themselves with credit. Most of these failures are due to lack of practice in writing and to insufficient instruction and drill on the points mentioned under *Form.* Until the pupils have had considerable practice in written exercises, their attention is so strongly fixed upon the mechanical features of the work that they give but little thought to the subject-matter.

Under the above conditions freedom of expression is impossible, and the failure of the pupils to express their knowledge in writing is not a fair test of their grasp of the subject; yet many teachers consider lack of such knowledge the source of the difficulty and begin a strenuous review, when at least a portion of the time thus spent should be devoted to drills on spelling, punctuation and the construction of sentences, for it is only as the child becomes master of the mechanics of these things that he is able to give the subject-matter the thought that will lead to free and natural expression.

14. Material. As already suggested, most of the material for the language work should be taken from the various branches in the course of study, supplemented by the personal experiences of the class. The lessons in history, geography, elementary science and reading should furnish much of the material for the intermediate grades. Letter-writing should begin in the fourth grade and continue in the following grades until the pupils become proficient in writing the different kinds of letters and formal notes which they will be called upon to use in their social and business relations. Plans for conducting these exercises are given under *Lesson Plans.* Business forms, such as promissory notes, receipts, checks, drafts and bills of sale, should be introduced whenever the lessons in arithmetic lead to their discussion, and the pupils should receive sufficient drill upon these forms to enable them to write each quickly and accurately. It is also advisable occasionally to allow the pupils to try an original story.

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[1] For the above rules we are indebted to Miss Orpha Timmons, eighth grade, public schools, Seattle, Washington.

History, geography and literature possess special advantages for language work. These subjects unfold naturally to meet the requirements of the pupils as they advance from class to class. They appeal to the memory, the imagination and the reason. They afford excellent opportunities for the choicest use of words, and their wide range of narration, description and dramatic incident enables the pupil to exercise his powers of description and his originality to the fullest extent.

We have shown how the reading and language can be related, by our reference to work that can be done with the *King of the Golden River*; the study of a story (Section 21) shows a plan suitable for a fourth grade, and, with a little expansion, for a fifth grade, also.

As an illustration of what may be done with history and geography, Niagara Falls and Gorge may be mentioned. With maps and pictures give the class a good idea of the location of the Falls, their size and grandeur; then make a similar study of the Gorge below the Falls. The high and almost vertical walls, the rapids, the whirlpool and the great bridges which span the chasm will all be objects of interest. Have the class take an imaginary journey on the belt line which extends along the top of the bluff on the Canadian side and along the foot of the bluff on the American side. Take another trip to Goat Island and visit the Cave of the Winds. Make a study of the Falls as affecting commerce. This will touch upon the traffic which passes through the

Great Lakes, and it will also show the importance of Buffalo as a shipping port. The necessity of the Welland Canal is clearly revealed in such a study, and, if you wish to treat this phase of the subject from a historical viewpoint, picture LaSalle's band of explorers carrying tools and material overland from Lake Ontario to a point six or seven miles above the Falls, and there, during the intense cold of winter, felling trees and constructing the *Griffin*, the first sailing vessel upon the Lakes.

The topics treated and the extent to which the work can be carried will depend upon the grade of the class and the time which can be devoted to the subject. Do not attempt too much. Individual tastes differ, so let each pupil in his exercise select a few points in which he is particularly interested, then emphasize them.

15. Limiting the Subject. Children's minds are prone to wander, and when given general topics upon which to write they frequently introduce much irrelevant matter. To prevent this, specific topics should be assigned, and with the younger classes the thought should be directed by outlines or questions, as already noted. Moreover, to ask children to write brief exercises on general topics is to request what is impossible, because such exercises call for the broadest generalization of which the adult is capable. Such exercises as a biography of General Grant in one hundred words are beyond their power. The topic should be limited by asking the class to describe some particular event in Grant's life. With grammar grade pupils more general topics can be used, but even here limitations are frequently necessary. For instance, it is not wise to ask these pupils to describe the surface of the United States or to give an account of the Revolutionary War in two hundred words. It would be better to ask them to describe within this space a mountain system or a single campaign. As far as possible make sure that each pupil has attained a personal point of view toward his subject before he undertakes to write about it.

16. The Blackboard. When properly used, the blackboard is an efficient aid in language work. If space will permit, a section of the board should be reserved for such directions and forms as the teacher wishes to keep constantly before the school. The board should also be used freely by the teacher during the recitations, for the purpose of constructing outlines, calling attention to errors and drawing graphic illustrations.

In the fourth and fifth grades the pupils can frequently place short written exercises on the board. This plan enables the teacher at a glance to see what errors are common to the class and to have them corrected at once. However, when written exercises are to be placed upon the board, it is usually best to assign a different topic to each pupil, or, if the class is too large for this, to divide it into three parts and assign a topic to each division, then so arrange the pupils that those of the same division will not stand next to each other. This plan removes the temptation to copy. If the pupils have the habit of using the eraser and rewriting, have them place erasers on the floor and allow them to erase only upon special permission. The pupil should think what he has to say before he writes; then his work should stand until it is carefully inspected by the teacher.

Occasionally it is a good plan to copy a written exercise upon the board, and then, in a kindly spirit, call attention to the errors and have the class assist in correcting them.

17. Correction of Errors. Calling attention to errors which the class as a whole are prone to make will prevent some of them, and the alertness of the teacher will enable her during the writing to prevent and to correct others. There will still remain, however, other errors that will have to be corrected by the teacher or by the teacher and the class together.

The errors in written language will be the same as those in oral composition — clumsy, ungrammatical sentences caused by using the wrong forms of the verb and pronoun, and by the wrong use of adverbs and adjectives. In addition to these, in the written work are errors in capitalization, punctuation and spelling. The cautions given in Section 5 apply with equal force to written work. It is not wise to attempt to correct all errors at once. By so doing you discourage the pupil and lead him to dislike the work. However, misspelled words and ungrammatical or incomplete sentences should always receive attention. The desired results are usually secured more quickly by giving attention first to one error and then to another in the special language lessons. Before the pupils begin writing, attention should be called to the points on which drills have been held. This will do much to check the impulse to write old, incorrect forms.

While the pupils are writing, the teacher should pass quietly among them, call attention to errors, encourage effort, gently remonstrate against carelessness and haste, and render assistance where needed. After the writing is finished, the pupils can exchange papers, and under the teacher's direction correct one another's work. However, before the next lesson the teacher should read the papers and glean from them the points that need special attention. As the pupils become more self-reliant, the teacher's oversight during the writing can be lessened, and in the fifth grade it should not be necessary. The corrected papers should be reviewed by the pupils. They should be required to write and to speak the correct form until it will seem familiar to them. In short exercises the whole should be rewritten after the errors have been corrected.

18. Special Language Lessons. Thus far we have discussed language work as it is related to the various branches in the course of study. Another feature of the work is found in special language lessons. Most of these should be given to lines of work that cannot be taken up with other subjects without causing too great a diversion of thought. Many of these lessons will take the form of drills for the purpose of correcting errors. The formation of irregular plurals, the principal parts of irregular verbs, the correct use of pronouns, the use of abbreviations, homonyms, antonyms and synonyms, the construction and parts of sentences, the use of capitals and punctuation are good illustrations of the lines of work to which these lessons should be devoted.

Variety of expression may be gained by the use of synonyms and by rearrangement of words and sentences.

Use such illustrations as *Columbus* DISCOVERED *America and* FOUND *Indians.*

Franklin DISCOVERED *electricity*; *Bell* INVENTED *the telephone.*

The man was KILLED, *but there is no evidence that he was* MURDERED.

Compare expressions of the same thought by different pupils, and decide in what respects one is better than another. Such exercises give variety, awaken interest and lead to good results.

LESSON PLANS FOR INTERMEDIATE GRADES

19. Why Necessary. Language books contain devices for teaching the different phases of language work. Most of these are good and can be used to the advantage of both teacher and class. If, however, the use of such devices is restricted to the lessons taken from the language book, the pupils frequently get the idea that whatever is learned in this way is to be used with these lessons only. It is therefore advisable for the teacher to have devices of her own which she can use as supplementary to those in the language book and which she can employ for drills on work taken from the lessons in the other branches. Lesson plans in language save time, make the work definite and provide exercises in all lines of work necessary for giving the pupils a good command of English.

20. Drills. Drills are among the most important exercises that the teacher can give. In order that they may hold the interest of the class they should be pointed, animated and brief. The plan should be changed frequently, and when the purpose for which the drill was instituted has been secured, the drill should stop. When the pupils, for instance, have learned the use of all the forms of the verb *be*, further drill upon this verb is not only a waste of time but also an imposition on the class. The plans here given are suggestive of what can be done.

(a) IRREGULAR PLURALS. Children learn the plural forms which are regular without difficulty, but the irregular forms often cause them considerable trouble.

(1) If the language book does not contain a list of nouns whose plurals are formed irregularly, take a large piece of heavy manila paper and make a chart showing both the singular and plural forms of those most commonly used, making the words large enough to be read from any part of the room. Place this chart in a conspicuous place and allow it to remain for several days. It should take this form:

SINGULAR	PLURAL	SINGULAR	PLURAL
beef	beeves	loaf	loaves
calf	calves	self	selves
elf	elves	sheaf	sheaves
half	halves	shelf	shelves
knife	knives	thief	thieves
leaf	leaves	wife	wives
life	lives	wolf	wolves
ox	oxen	child	children
foot	feet	baby	babies
goose	geese	tooth	teeth
man	men	louse	lice
woman	women	mouse	mice

(2) In teaching these forms, appeal both to the ear and to the eye. First give oral drills, having the pupils recite the list of words, giving first the singular, then the corresponding plural.

(3) After a number of oral drills, remove the chart and dictate the singular of the words, letting the pupils write the plurals. Repeat this exercise until all the class can write the forms correctly.

(4) Give frequent written exercises in which the pupils will fill blank spaces in sentences, such as the following:

The farmer is plowing with a yoke of ....

The cat caught one mouse, but three .... ran away.

One child is standing in the door and several .... are on the porch.

John had one knife and his uncle gave him another. How many .... does he now have?

This sentence drill is important, because the pupils who write the forms correctly in columns are sometimes unable to do so when using the words in sentences. From filling blanks in separate sentences, the pupils should pass to writing paragraphs of connected sentences in which some of the plural forms occur.

(b) PERSONAL PRONOUNS. The drills on personal pronouns should consist largely of oral and written exercises in which the pupils are required to use the correct forms, because these forms must be firmly established before the class can understand the case relations from which they arise. Practice should be given on such sentences as these:

It is .... (I) (he) (she).

Will you let Nellie and .... sit together?

I saw .... (him) (her).

Much practice of this kind will be necessary, if pupils have acquired the habit of using these forms incorrectly. The sentences can be written upon the blackboard and the necessary words supplied by the class as the lesson proceeds. Another plan is to write these sentences in complete form on manila paper and place the chart in a position where all can see it.

(c) IRREGULAR VERBS. Irregular verbs are often more troublesome than pronouns. There are so many and the incorrect use of the forms has so often become habitual before the pupils enter school, that, however carefully they may have been trained in the lower grades, many errors will occur in the fourth grade, and the fifth will not be entirely free from them. Nearly all these errors occur in the use of a few verbs, and if the drills are confined to these, the errors can be corrected. These verbs are *be*, *do*, *go*, *lay*, *lie*, *see*, *set* and *sit*.

(1) For sixth, seventh and eighth grades prepare a chart like this model, and hang it upon the wall where every pupil can see it:

PRESENT TENSE	PAST TENSE	PRESENT PARTICIPLE	PAST PARTICIPLE
am (are) (is)	was	being[1]	been[2]
do	did	doing	done
go	went	going	gone
lay (to place)	laid	laying	laid
lie (to rest)	lay	lying	lain
see	saw	seeing	seen
set (to place)	set	setting	set
sit (to rest)	sat	sitting	sat

This chart is a constant reminder of errors which the pupils are apt to make. It is likewise a silent monitor which checks the impulse to many an error in both oral and written work.

(2) Give occasional oral drills on the chart by having the pupils repeat *I am, I was, I am being, I have been*; *I do, I did, I am doing, I have done*; *I see, I saw, I am seeing, I have seen, I have been seeing, I shall be seeing.* Let the exercises include every verb on the chart.

(3) With the chart removed, ask the pupils to use the correct form of each verb with *have*, *has* and *had*. Frequent

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[1] The words in this column, except *being*, should be preceded by *am*, *was*, *have been*, *had been*, *shall be* or *will be*, when used in a sentence. *Being* should be preceded by *am* or *was*.

[2] The words in this column should be preceded by *has*, *have*, *had*, *shall have* or *will have*, when used in a sentence.

drills of this kind will soon fix these forms in the mind so firmly that they will be used correctly in writing, but it requires a long time entirely to eradicate these errors.

(4) For the fourth and fifth grades, prepare sentences containing these verb forms, and use them for drills. In these grades say nothing about the reason for the form of the verb used.

(d) MISCELLANEOUS ERRORS. There are numerous errors of a miscellaneous kind that should be corrected long before the pupils can understand the principles and rules of grammar. By enlisting the pupils in detecting and correcting these errors, their coöperation will be of great value. Their discoveries can be compiled in a list entitled *Say* and *Don't Say*, according to the following plan:

SAY	DON'T SAY
I *fear* I cannot go	I *am afraid* I cannot go.
The book *isn't* mine	The book *ain't* mine.
As if it *were*	As if it *was.*
There is *no alternative*	There is *no other alternative.*
Anybody else's hat	*Anybody's* else hat.
Anybody can do it if *he* chooses	Anybody can do it if *they* choose.
Any one of these *is*	Any one of these *are.*
You look *beautiful*	You look *beautifully.*
You look *bad*	You look *badly.*
I feel *bad*	I feel *badly.*
She sang *beautifully*	She sang *beautiful.*
I'll *come* back	I'll *be* back.
Compared *to*	Compared *with.*
I can't find *any* pencil	I can't find *no* pencil.

By writing these expressions on cards of the same size and arranging them alphabetically, you may make them easily accessible for reference. The cards will constitute a sort of practical grammar, which should be consulted by the pupil whenever he feels in doubt about an expression that it contains. This list suggests the variety of errors that can be so arranged as to call attention to the error and the correct form at the same time.

The organization of a language improvement society among the pupils who wish to correct their speech and who are willing to exercise a kindly spirit in giving and receiving criticism often creates enthusiasm and leads to excellent results, but the organization should be under the control of the teacher.

Caution. In referring to these errors always call attention to the correct expression. The pupil should forget the incorrect form as soon as possible.

21. The Study of a Story. An occasional story lends variety and interest to the language work and also gives the pupils an opportunity to exercise their imagination somewhat more freely than sketches from geography and history. The following story can be used in the fourth or fifth grade. If given to the latter, however, the plan should contain more details than the one here given:

GENERAL LEE'S HORSE

In a certain meadow in Greenbrier County, in the southeastern part of what is now West Virginia, in the summer of 1859, you might (if you had been living so long ago) have noticed a number of young horses contentedly nibbling the soft grass. Among them was a beautiful two-year-old gray colt called Jeff Davis. So handsome was Jeff that at the county fair he was given the blue ribbon. As there were many fine horses at the fair, it meant a great deal to receive this prize, and it was a very proud gray colt that cantered home that night.

By the time Jeff was four years old, people no longer spoke of county fairs, but of war; and troops of soldiers used to ride past the meadows where the horses grazed.

One day a soldier came to buy a horse for his brother, who was a major. After all the horses had been carefully examined, Jeff Davis was sold to the stranger, and together they went their way. The gray colt was so proud to be going off to war that he seemed not to feel sorry to leave the old quiet days in the pleasant meadows.

When Jeff and his rider reached the camp, the young horse was much admired and after a time was named Greenbrier, for his native county.

On a day in fall there came to the camp a man with whom Greenbrier was to spend most of his life. This man was General Lee, who after some months bought Greenbrier and named him Traveller. In time the two became constant companions.

We who live in days of peace can not know through what scenes Traveller carried his master, what bloody battles, what suffering and danger. While at first success came to the soldiers in gray, matters changed later on, and defeat was very hard to bear! Every day General Lee and his splendid steed traveled many weary miles as the brave commander tried to win his cause. When at last he was forced to give up and the struggle ended on that April day when the Confederates surrendered to General Grant, the Southern general bade farewell to his soldiers, who crowded around Traveller and were as sad to part from him as from their beloved leader.

However, the gray horse was not separated from his master but carried him home to Richmond, afterwards staying with the General at Lexington, where they often took an airing together; and sometimes in the summer Traveller passed over the roads that had borne his footprints when he wore the blue ribbon home from the county fair. For five years this happy life went on; but then sorrow came to Traveller, for his kind master died.

From this time on Traveller was caressed more than ever, though not for long. One bright summer day when he came as usual to get a lump of sugar from someone on the veranda, it was noticed that he was limping. General Lee's son looked at Traveller's hoof and found a small nail in it. He pulled out the nail, and as it left but a tiny wound, no more attention was given the matter. But a few days later it was found that Traveller was suffering from lockjaw. Since there was no horse doctor in Lexington, General Lee's own physicians came to look after the old horse, who received the best of care; but all in vain. In a short time Traveller died, to the great sorrow of the many people who had known and loved him.

Whenever we think of the noble general who dealt kindly with all and who was such a brave soldier, we shall remember also the beautiful gray horse that served him so long and that possessed the same good traits. (Adapted from *The Ladies' Home Journal.*)

(1) Ask a few pupils to tell about favorite domestic animals. The purpose of this is to arouse interest. Then say that you will tell of a very remarkable horse who played a part in our history.

(2) Read or tell the story to the class.

(3) Question the class on the leading facts, somewhat as follows: Where did the colt live? Find this county on the map? Why was the colt named Jeff Davis? What war is spoken of in the story? Why did General Lee buy the gray horse? What shows you that General Lee liked

this horse? Why were the soldiers sad at parting with Traveller? What did Traveller do after the war was over?

Enough questions should be asked to test the pupils thoroughly on their remembrance and understanding of the facts.

(4) Have the pupils tell the story. If they are unable to give a connected account from one presentation, read or tell the story again before requiring the class to write and place on the board, as the members of the class may suggest, a series of phrases which will indicate the chief steps in the story.

(5) Have the class write the story.

(6) Subject the papers to the same plan of criticism as you use with other written exercises.

22. Letter Writing. Writing letters will constitute about all the writing which most of the pupils do after leaving school. Instruction in letter writing should begin early and continue until all the pupils can write correctly and in proper form each of the different kinds of letters used in correspondence. Some of these forms may not be mastered until the pupils reach the seventh or eighth grade, but those most commonly used should be learned in the intermediate grades.

(a) General Suggestions. (1) Begin with what the pupils can do. The first exercises in the fourth grade should be very simple.

(2) Place only correct forms before the pupils and insist upon these forms being followed.

(3) Make the exercise of such nature that the pupils will engage in actual correspondence. This will keep interest alive.

(4) Be particular about form and neatness, and insist upon accuracy in spelling, capitalization and punctuation.

(5) Scrutinize the pupils' work carefully, if you would secure good results.

(6) Proceed slowly, teaching one thing at a time.

(b) Parts of a Letter. One of the first exercises should be devoted to teaching the parts of a letter. Write a model letter on the blackboard and call attention to the parts. These are the heading, the salutation, the body, the polite ending or complimentary close, and the signature. After studying the letter and learning the position of each part and the use of it, have the pupils rule a sheet of paper so as to indicate where each part should be placed. When this is done, the name of each part should be written in its proper place and enclosed in parenthesis. This sheet will serve as a pattern which the pupils should follow carefully in all the letters they write.

LETTER FORM

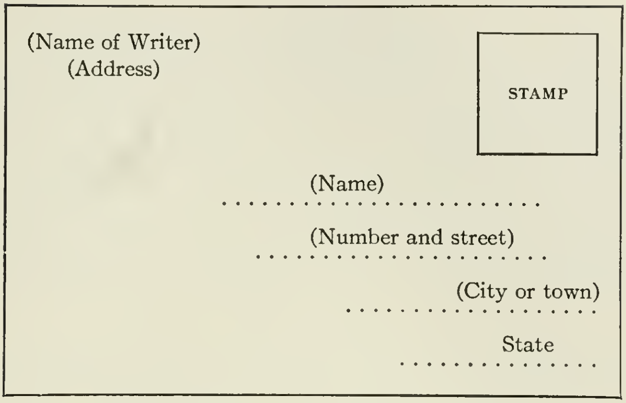
(Place From Which Written)
....
(Date)
....
(To Whom Written)
....
(Address)
....
(Salutation):
....
....
....
........................(Body).....................
....
....
(Complimentary Close),
....
(Name of Writer).
....

(c) Capitals and Punctuation. Place upon the blackboard a number of headings and salutations, and call attention to the words beginning with capitals and to the punctuation of each part of the letter. The punctuation following the salutation varies, but the colon is most generally used, as, *My dear Brother*: Have the pupils copy several times the forms placed upon the board. In a succeeding exercise place a form on the board for inspection; then erase it and dictate several headings and salutations for the pupils to copy. Proceed slowly, so that they will have plenty of time to do the work. Practice similar exercises with the ending of a letter.

(d) THE SUBJECT-MATTER. The pupils usually have the most trouble with the body of a letter. Much of this difficulty is removed by suggesting the topic, the purpose and the person to whom the letter is to be written. A good beginning can be made by having the children write to father or mother for something desired, as a book, a sled or a pair of skates. The first few letters should relate to but one thing. After a little practice the length of the letter can be extended. As soon as the pupils are able to place the letter in proper form, each child should be encouraged to deliver his letter to the person to whom it is written.

(e) FOLDING. The letter should be so folded as to fit the envelope nicely, and, when opened, to have the top of the page in position to read. In folding a letter-size sheet, the first fold should be made just below the middle of the sheet, from bottom to top; then turn the folded sheet quarter round toward the right; make the second fold by folding from you, and the last by folding toward you. A letter-size sheet is $8\frac{1}{2}$ x 11 inches, and when folded properly there should be about one-sixth of the surface in each fold. Special attention is directed to this matter, as probably not more than one-half of the people outside of business offices fold letters properly, even after writing them in a highly creditable manner.

(f) THE ENVELOPE. The address on the envelope is known as the superscription. This should be written plainly and should contain all the directions necessary for the delivery of the letter. Teach the proper forms by use of models, as in the parts of a letter.



23. Lessons from Pictures. Simple pictures offer good material for stories in the intermediate grades. The children are interested in their study, and the written exercises based upon them often reveal considerable originality of expression. The pictures *Saved* and *Grace Darling and Her Father* (see "List of Illustrations") are good examples of the kind of pictures that can be used successfully in these grades.

TEST QUESTIONS

1. Why does poor teaching in other branches lead to defective work in language?

2. Show why the plan for language work should extend through all the grades.

3. Why are teachers prone to neglect the oral language work?

4. What is your plan for conducting recitations by topic? What difficulties do you meet? How do you overcome them?

5. What matters are vital to accuracy in written work? Why?

6. What are the advantages to the pupil in taking much of the material for the language work in the intermediate grades from geography, history, literature and science?

7. What uses do you make of the blackboard in teaching language? Give your reasons for each use.

8. State what you consider the most important feature of the language work in the intermediate grades and give reasons for your opinion.

9. Explain your method of teaching letter writing in the fifth grade.

10. What uses do you make of pictures in teaching language?

CHAPTER FIVE

COMPOSITION AND GRAMMAR

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TYPICAL LESSON PLANS FOR GRAMMAR GRADES

1. A Biographical Sketch. The chief purpose of the following sketch is to show the various lines of research such a theme presents, and also to show how the work in history can be used as a basis for language lessons. Though brief, the sketch contains all the essential facts of the biography. It can be used in the fifth grade on a plan similar to that given in Section 21, on pages 196-198, but the theme is capable of sufficient expansion to adapt it to any grade. A good sixth grade should be able to use the large divisions of the plan, as (a), (b), (c), and a seventh grade should be able to use the complete outline, provided there is access to the necessary reference works.

The study should lead the pupil to see the pictures to which his attention is called in the sketch, then to describe them, entering into detail much more fully than does the sketch. In making the assignment, one line of research may be given to one division of the class, and another line to another, if the time allotted to the study of the selection is too brief to admit of each pupil's doing all the work. However, it is better to give sufficient time to a selection to enable the entire class to do the work assigned.

The exercise is valuable not only for the language training derived from it, but also for the power of organizing a subject and the method of study which it gives the class. After the pupils have developed a few topics according to this plan, under the teacher's direction, they should be able to develop new topics without assistance.

JACQUES MARQUETTE

During the early period of American history, while the English were founding their colonies along the Atlantic coast, the French, entering the continent by way of the Saint Lawrence River, were busy exploring the vast interior of what is now the United States and taking possession of the country in the name of the King of France. Among the most zealous of these explorers were the Jesuit missionaries, priests of the Roman Catholic Church, who were sent to the New World by their order to convert the Indians to Christianity. These missionaries were brave and faithful men. They were willing to endure any hardships and to encounter any danger if by so doing they could lead the Indians to accept Christianity or could strengthen the position of the Church in the New World.

Among these missionaries was one whose name will always hold a prominent place in the history of our country. This was Father Jacques Marquette. He was a member of a distinguished family in the northern part of France. At seventeen he joined the Jesuits and was educated in their schools. At twenty-nine he was sent to America, where he spent his first three years in learning Indian languages. He seems to have possessed a wonderful talent as a linguist, for within this time he mastered six or seven Indian dialects. The Jesuits had several mission stations around Lake Huron, Lake Superior and Lake Michigan, and Marquette was sent to the mission at Saint Esprit, near the western end of Lake Superior.

To this mission came many tribes of Indians from various regions about the lake. Among these tribes were the Illinois, who told the missionary of the great river that they crossed to reach the mission. They described the river as rising far in the North and flowing they knew not whither. Marquette, however, believed that it emptied into the Vermilion Sea, or what is now known as the Gulf of California. These Indians entreated Marquette to come and live among them and teach them to worship the same God as the Black-robe, the name by which the priests were everywhere known among the Indians. But before he could carry out his plan to visit the Illinois, the Hurons, among whom the mission was located, were attacked by the Sioux, defeated and driven eastward. Marquette went with them and established a new mission at Point Saint Ignace, where he remained two years. However, during this time his thought was with the Illinois and he prayed without ceasing that he might be sent to them.

Meanwhile, vague rumors of the great river reached the French at Montreal, and the governor of Canada, Count Frontenac, sent Louis Joliet, a fur trader, to explore the country and learn whether or not such a river was there; for although De Soto had discovered the Mississippi nearly one hundred forty years before, these Frenchmen knew nothing of the discovery. Joliet arrived at Saint Ignace, where he found Marquette, who had been chosen to accompany him.

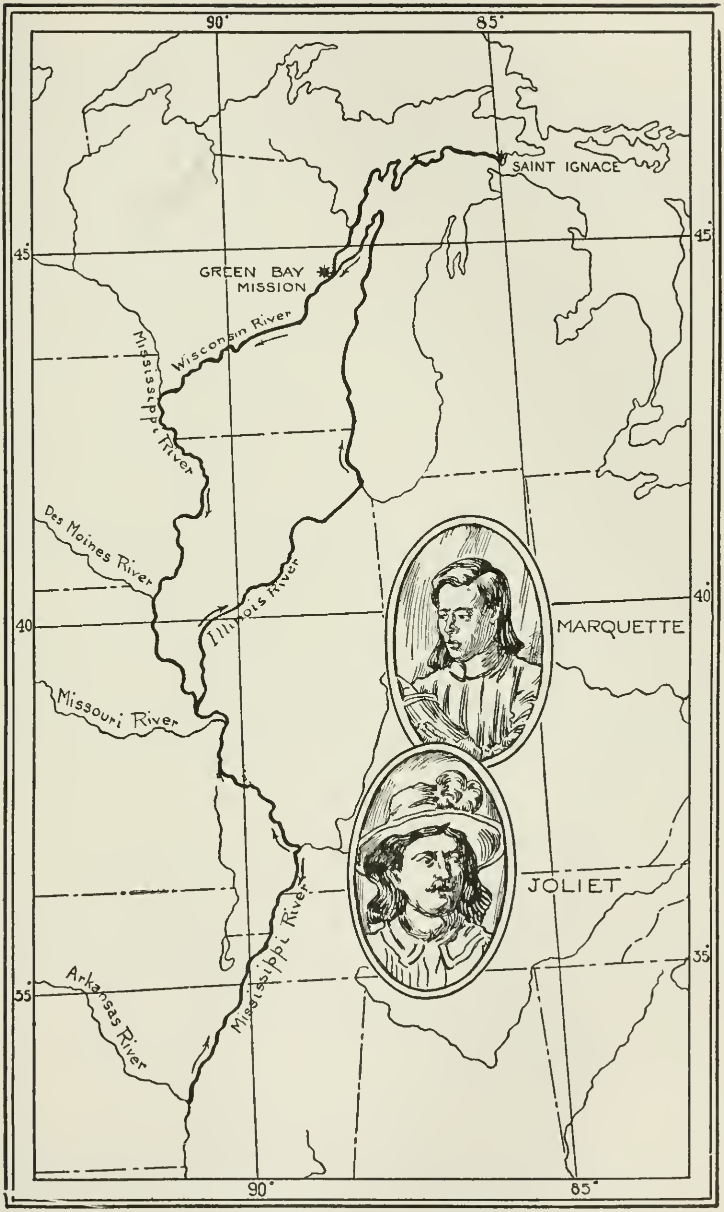
The expedition, consisting of five men, with a supply of smoked meat and corn, was loaded into two birchbark canoes and set forth from Saint Ignace May 17, 1673. They crossed the Straits of Mackinac, followed the shore of Lake Michigan until they reached the Menominee River, which they ascended to the village of the Menominee or White Rice Indians. When these Indians learned of the destination of the expedition, they endeavored to persuade Marquette and his followers to turn back, assuring them that the tribes to the South were ferocious and that they put every stranger to death without any cause or provocation. They added that the river was haunted by demons whose roar could be heard at a great distance, and who destroyed everything that came within their reach. It is needless to say that the travelers gave no heed to these warnings. From the Menominee village they went to the mission at the head of Green Bay, entered the Fox River, followed it as far as they could, then carried their canoes for a mile and a half over the height of land, and dropped them into the Wisconsin. Here the explorers dismissed their Indian guides and embarked upon their long voyage. On June 17 they entered the Mississippi and turning their canoes southward, proceeded down the stream.

The journey of this little band of explorers was attended by unknown dangers; therefore they proceeded with the greatest caution, extinguishing their fires after cooking their meals, and at night anchoring their canoes in the middle of the stream so that they might not be attacked by hostile Indians. After they had journeyed for more than a fortnight, they discovered footprints on the western bank of the river. Joliet and the missionary, following a footpath for over a mile, discovered an Indian village on the banks of a small river. This village proved to be one of the homes of the Illinois, and the Frenchmen were received with the greatest courtesy and favor, the chief saying to them: "Frenchmen, how bright the sun shines when you come to visit us! All our village awaits you and you shall enter our wigwams in peace." After spending a day and a night with these Indians, Marquette and his companion returned to their canoes. As they were about to depart, the head chief of the village presented them with a peculiar pipe beautifully decorated with feathers. This was the sacred calumet, the most valuable present in the estimation of the Indians that they could give, and, as it proved afterward, the most valuable token of love and respect which the explorers could have received at their hands.

From this point the expedition proceeded onward down the river, meeting now and then with Indians of other tribes, some of whom came to them with hostile intent; but whenever the calumet was shown, their attitude became friendly and they treated the Frenchmen with great kindness. After following the great river to a point below the Arkansas and to within seven hundred miles of its mouth, the explorers decided that they had gained all the knowledge necessary. They knew that the Mississippi emptied into the Gulf of Mexico and not into the Atlantic Ocean nor the Vermilion Sea. Fearing that should they go farther they might be captured by the Spaniards, they decided to return.

The voyage up the river was one of great difficulty and hardship, since they had to paddle their canoes all the way against a swift current. When at length they reached the Illinois River they entered this stream and soon found Indian guides who were willing to conduct them to Lake Michigan at a point near which Chicago now is. On the voyage up the Illinois the explorers came to Kaskaskia, another large village of Illinois Indians. Marquette promised these Indians that he would return and establish a mission in their village. After reaching the lake the expedition proceeded slowly toward its final destination and reached Green Bay about the first of October, having been absent nearly four months and having paddled their canoes more than twenty-five hundred miles. Marquette remained at Green Bay to regain his strength, for during the return journey he had been ill most of the time. Joliet, however, departed for Montreal and Quebec to report his discovery. Unfortunately just before reaching Montreal his canoe was overturned, two of his companions were drowned and he lost his papers and charts, so that he had nothing but a verbal report to make to the governor.

In the autumn of the next year, Marquette, having recovered in a measure from his illness, started to found the mission in Kaskaskia. He and his companions, however, were unable to reach their destination that season and they spent the winter in a cabin made of logs and bark near what is now the heart of Chicago. Here they were visited by bands of Illinois and Potawatomi Indians and those of other tribes, all of whom treated them with the greatest kindness. In the spring the journey was resumed, and the village, which was located a few miles below the present city of Ottawa, Illinois, was reached.



MARQUETTE AND JOLIET
The Men and Their Routes

The missionary spent some months there and was very successful in converting the Indians to Christianity. However, he again became ill and realized that he must return to the mission at Saint Ignace. He set out on this journey a few days after Easter, in 1675. The expedition crossed Lake Michigan and rowed northward along its eastern shore. Marquette continually grew weaker and was unable to proceed. When near a small stream flowing into the lake, the expedition halted. Marquette's companions constructed a rude hut of bark and placed him within. They did everything they could to relieve his suffering, but he constantly grew weaker and passed away on May 19, thanking God that he was able to give his life for the cause of winning the Indians to Christianity. He was buried near the stream which now bears his name, and his companions took their lonely journey to Saint Ignace. The following year a party of Ottawa Indians passing through the region found the grave and prepared the bones according to their method of burial and carried them to Saint Ignace, where they were re-interred under the old chapel. Here they remained until 1877, when they were discovered and removed to a small park near the village, where their resting-place is now marked by a marble column as white and pure as the life of the great missionary whom it commemorates.

2. The Outline. The following outline is given to suggest a plan for studying a selection of this nature. If this sketch be given a sixth grade for the first exercise of the kind, an outline should be given them, but they should soon be able to construct their own outlines, as should seventh and eighth grade classes.

I. THE SETTING.
  (1) Condition of the interior of the United States at the time.
  (2) Conditions which enabled the French to reach the interior of the country and confined the English to a narrow strip along the Atlantic coast.
  (3) Habits and customs of the Indians.
  (4) Religion of the Indians.

II. THE JESUITS.
  (1) Organization of the order.
  (2) Purpose of the order.
  (3) Their reasons for sending missionaries to America.
  (4) Reasons why it required courage to become a missionary to the Indians. (Tales of the dangers and sufferings of other missionaries can here be used, if desired.)

- III. MARQUETTE.
  - (1) His birth and early training.
  - (2) His character as illustrated by his acts.
  - (3) The Indians' love for him.
  - (4) His purpose in joining Joliet on the expedition down the Mississippi.
- IV. THE EXPEDITION.
  - (1) Joliet.
    - (a) His early life and education.
    - (b) His bravery, temperament and character. (Compare him with Marquette in these respects.)
    - (c) His purpose in undertaking the expedition.
    - (d) Why Marquette was selected to accompany him.
  - (2) The canoes.
    - (a) Material of which they were built.
    - (b) Shape.
    - (c) Size.
  - (3) The route. (Sketch this on map.)
  - (4) The first meeting with the Illinois Indians. The calumet.
  - (5) Dangers encountered.
  - (6) The return.
    - (a) Arduous labors.
    - (b) Meeting the Illinois Indians at Kaskaskia.
    - (c) Lake Michigan.
    - (d) End of the journey.
    - (e) Distance traveled.
    - (f) Illness of Marquette.
    - (g) Joliet's misfortune.
- V. THE MISSION AT KASKASKIA.
  - (1) The journey.
  - (2) Winter quarters.
  - (3) The mission established.
- VI. MARQUETTE'S ILLNESS AND DEATH.
  - (1) The return trip.
  - (2) Death of Marquette.
  - (3) His burial at Saint Ignace.
- VII. IMPORTANCE AND INFLUENCE OF THIS EXPEDITION.
  - (1) To the French.
  - (2) To the Indians.
  - (3) To the English.
- VIII. COMPARE WITH OTHER EXPEDITIONS.
  - (1) De Soto's.
  - (2) Champlain's.
  - (3) La Salle's.

3. Description. Simple narrative, that is, the mere telling of events in the order of their occurrence, is the easiest form of composition, and should be the first to engage the child's attention; but simple narrative alone soon becomes tiresome. It needs to be embellished by the introduction of reasons, problematical results and, more than all, descriptions. For illustration, how much can be added to the story of Marquette by a description of the great river and the country through which it flows, as they appeared at that time! You like to read one author better than another because his writings are full of vivid pictures, and he endows with life everything he touches. Note the following:

(1) This is the forest primeval. The murmuring pines and the hemlocks,
Bearded with moss, and in garments green, indistinct in the twilight,
Stand like Druids of old, with voices sad and prophetic,
Stand like harpers hoar, with beards that rest on their bosoms.
Loud from its rocky caverns, the deep-voiced neighboring ocean.
Speaks, and in accents disconsolate answers the wail of the forest.

(2) There was never a leaf on bush or tree,
The bare boughs rattled shudderingly;
The river was dumb and could not speak,
For the weaver Winter its shroud had spun.
A single crow on the tree-top bleak
From his shining feathers shed off the cold sun;
Again it was morning, but shrunk and cold,
As if her veins were sapless and old,
And she rose up decrepitly
For a last dim look at earth and sea.

You will recognize the first selection as the introduction to *Evangeline*. The second is the first stanza in Part Two of Lowell's *Vision of Sir Launfal*. Supposing Longfellow had written this story in simple narrative, the facts in the above lines would appear something like this:

The primeval forest of Acadia consists of pines and hemlocks, many of which are partially overgrown with moss. The breaking of the waves against the rocky caverns of the coast produces a deep, hollow roar which answers the murmuring of the wind among the trees.

In the poem every object is endowed with life. In the paraphrase this feature is almost entirely lacking. You will notice also that in the descriptions by both authors figures of speech are freely used. Their study is essential to good description. The direction for this line of study is given on pages 13-20, in Sections 14-20, and the work there outlined is as necessary to language as to reading.

A good description is a word picture of the object described, and just as the artist must select and mix his paints with care if he would produce on his canvas the actual tints of the landscape, so must the artist with words use equal care in their selection and combination if he would convey to his hearers or readers a true idea of what he describes. Description, therefore, is valuable for the training it gives in the use of words. It also develops originality and subjects the imagination to the control of the reasoning powers. Pupils in all grades should be required to give descriptions, for the mental development and the vocabulary of the pupils is greatly increased by the exercise.

Selections like these constitute the best possible material that can be found for language work. Excellent results can be obtained by studying them according to the following plan:

(1) Ask the pupils to form mental pictures, thus seeing the relations existing between words, phrases and clauses.

(2) Study the functions, of different words. Have the pupils learn the parts of speech, and the use and kinds of phrases and clauses.

(3) Give constant attention to the selection of words. Here the use of synonymns will be found helpful. The study, however, should be carried only as far as is necessary to prove the selection of words by the author to be suitable

or unsuitable, as the case may be, the test being the use of those which suggest the largest and most complete pictures.

In the study of synonyms special stress should be laid on the fact that no two words have exactly the same meaning; for instance, compare the adjectives in the sentence, *I saw a* TALL *man leaning against a* HIGH *fence.* When the pupils realize this, they begin to understand that they have it within their power, by the choice of words, to make their conversation and their written exercises lively and interesting or monotonous and dull.

(4) Observe harmony of time, place, incident, etc.

(5) Insist upon definite work and complete statements.

(6) Let oral description and narration have a large place in this work.

(7) Follow oral lessons by written descriptions of similar scenes or of similar experiences, where possible using the words and expressions of the author studied.

(8) Drill by placing on the blackboard paragraphs of description in which blanks are left in place of several of the most telling words, particularly adjectives. Let the class fill the blanks and then compare their choices with the original.

4. Study of a Selection. The plan for studying the following extract from Irving's *Knickerbocker's History of New York* suggests what may be attempted with this class of exercises in the seventh and eighth grades:

KNICKERBOCKER LIFE IN NEW YORK

In those good old days of simplicity and sunshine, a passion for cleanliness was the leading principle in domestic economy, and the universal test of an able housewife.

The front door was never opened, except for marriages, funerals, New Year's Day, the festival of St. Nicholas, or some such great occasion. It was ornamented with a gorgeous brass knocker, which was curiously wrought — sometimes in the device of a dog, and sometimes in that of a lion's head — and daily burnished with such religious zeal that it was often worn out by the very precautions taken for its preservation.

The whole house was constantly in a state of inundation, under the discipline of mops and brooms and scrubbing-brushes; and the good housewives of those days were a kind of amphibious animal, delighting exceedingly to be dabbling in water — insomuch that an historian of the day gravely tells us that many of his townswomen grew to have webbed fingers, "like unto a duck."

The grand parlor was the *sanctum sanctorum*, where the passion for cleaning was indulged without control. No one was permitted to enter this sacred apartment, except the mistress and her confidential maid, who visited it once a week for the purpose of giving it a thorough cleaning. On these occasions they always took the precaution of leaving their shoes at the door, and entering devoutly in their stocking feet.

After scrubbing the floor, sprinkling it with fine white sand — which was curiously stroked with a broom into angles and curves and rhomboids — after washing the windows, rubbing and polishing the furniture, and putting a new branch of evergreens in the fire-place, the windows were again closed to keep out the flies, and the room was kept carefully locked, until the revolution of time brought round the weekly cleaning-day.

As to the family, they always entered in at the gate, and generally lived in the kitchen. To have seen a numerous household assembled round the fire, one would have imagined that he was transported to those happy days of primeval simplicity which float before our imaginations like golden visions.

The fire-places were of truly patriarchal magnitude, where the whole family, old and young, master and servant, black and white — nay, even the very cat and dog — enjoyed a community of privilege, and had each a right to a corner.

Here the old burgher would sit in perfect silence, puffing his pipe, looking in the fire, with half-shut eyes, and thinking of nothing, for hours together; the good wife on the opposite side, would employ herself diligently in spinning yarn or knitting stockings. The young folks would crowd around the hearth, listening with breathless attention to some old crone of a negro, who was the oracle of the family and who, perched like a raven in the corner of the chimney, would croak forth, for a long winter afternoon, a string of incredible stories about New-England witches, grisly ghosts, horses without heads, hair-breadth escapes, and bloody encounters among Indians.

In these happy days, fashionable parties were generally confined to the higher classes, or *noblesse*; that is to say, such as kept their own cows, and drove their own wagons. The company usually assembled at three o'clock, and went away about six, unless it was in winter-time, when the fashionable hours were a little earlier, that the ladies might reach home before dark.

The tea-table was crowned with a huge earthen dish, well stored with slices of fat pork, fried brown, cut up into morsels, and swimming in gravy. The company, seated round the genial board, evinced their dexterity in launching their forks at the fattest pieces in this mighty dish — in much the same manner that sailors harpoon porpoises at sea, or our Indians spear salmon in the lakes.

Sometimes the table was graced with immense apple-pies, or saucers full of preserved peaches and pears; but it was always sure to boast an enormous dish of balls of sweetened dough, fried in hog's-fat, and called doughnuts or oly-koeks — a delicious kind of cake, at present little known in this city, except in genuine Dutch families.

The tea was served out of a majestic Delft tea-pot, ornamented with paintings of fat little Dutch shepherds and shepherdesses tending pigs — with boats sailing in the air, and the houses built in the clouds, and sundry other ingenious Dutch fancies. The beaux distinguished themselves by their adroitness in replenishing this pot from a huge copper tea-kettle.

To sweeten the beverage, a lump of sugar was laid beside each cup and the company alternately nibbled and sipped with great decorum; until an improvement was introduced by a shrewd and economic old lady, which was to suspend, by a string from the ceiling, a large lump directly over the tea-table, so that it could be swung from mouth to mouth.

At these primitive tea-parties, the utmost propriety and dignity prevailed — no flirting or coquetting; no romping of young ladies; no self-satisfied struttings of wealthy gentlemen, with their brains in their pockets; no amusing conceits of smart young gentlemen with no brains at all.

On the contrary, the young ladies seated themselves demurely in their rush-bottomed chairs, and knit their own woolen stockings; nor ever opened their lips, excepting to say, *yah*, *Mynheer*, or *yah*, *yah*, *Vrouw*, to any question that was asked them. The parties broke up without noise or confusion. The guests were carried home by their own carriages; that is to say, by the vehicles nature had provided them, excepting such of the wealthy as could afford to keep a wagon.

(1) Let the pupils study the selection, then give an oral reproduction of it in their own words.

(2) Require the class to look up and write the synonyms for the following words:

amphibious, assembled, branch, burnished, cleanliness, closed, community, constantly, control, curiosity, device, devoutly, diligently, discipline, domestic, encounter, exceedingly, festival, generally, gorgeous, grand, gravely, happy, incredible, indulge, inundation, leading, magnitude, occasion, opposite, oracle, ornamented, passion, patriarchal, permitted, precaution, preservation, primeval, revolution, simplicity, thorough, transported, universal, whole, zeal.

The words should be written in a column and the synonyms in a parallel column, in the following manner:

branch	limb
burnished	polished
cleanliness	cleanness
closed	shut

(3) Require the pupils to write the first two paragraphs of the selection, using their synonyms in place of the words in the original text. Compare these paragraphs with the original and decide in each case which is the better word to use, the original or the synonym, and why.

(4) Complete the rewriting of the selection on the same plan. Which is the more lifelike, the original or the reproduction? Why? In which can you see the picture more clearly? Why?

(5) Require the pupils to select other words and find their synonyms.

(6) Look up all the allusions that are not understood, such as Delft, Saint Nicholas, *sanctum sanctorum*, New England witches, *noblesse*.

(7) Let each pupil choose some picture from the selection and expand it according to his fancy. The tea table, the people who gathered at the party, the burgher and the grand parlor are suggestive of themes that can be chosen.

5. Brief Descriptions. Exercises in brief descriptions often afford a more valuable training than the longer exercises.

(1) Ask the pupils to describe different kinds of dress goods, such as calico, gingham, flannel, silk. Ask the boys to describe the fabrics from which men's clothes are made, such as cashmere, broadcloth, worsted, beaver. Describe the different kinds of carpets, as ingrain, brussels, Wilton, Axminster.

(2) Learn how many pupils know the following colors or tints: magenta, solferino, indigo, plum, violet, purple.

(3) See how many shades of red, blue, green, yellow and other colors the class can name.

(4) What colors are indicated by the names turquoise, sapphire, opal, jet, pearl, ruby, amber, amethyst, garnet?

(5) Require the pupils to give full descriptions of persons and objects not in the schoolroom and of places and scenes. To add interest to this exercise request the pupil to refrain from mentioning the name of the person or object and let the other members of the class guess what has been described. These exercises can include descriptions of birds, animals, trees, flowers and an infinite number of other objects. The descriptions should be concise, plain and accurate. In order that these requirements may be made, the pupil must select and use his words with care.

The illustrations given below were written in class, immediately upon the assignment of the topic. They show what can be accomplished in an eighth grade[1]:

THE FACE THAT I KNOW BEST

The face which I know best is, to me, the most beautiful face I have seen. A mass of heavy auburn hair, slightly tinged with gray, frames a face from which can be read goodness and sympathy and which reflects that which is in her warm heart. Delicately etched eyebrows, dark blue eyes, a short nose, interesting because one can hardly tell what to expect from it, sauciness or independence, and a very small, ruby, well shaped mouth all go to make up what I think is the most beautiful and loving of faces.

A NIGHT ALARM

A childish cry, a bark and a mew! That was all, but in a moment heads appeared at upper windows and slippered feet were heard on the stairs. In the small city yard sat the cause of the alarm. It was but a small, white-clad figure of a child, but clutched close in its arms was a black object, none other than the household cat. At a distance of a few yards, now convulsively clutching the ground, now springing about with short, quick barks, stood the dog, whose voice had formed part of the uproar. When the main figure in the scene opened frightened blue eyes on the unfamiliar scene, she explained in lisping words that pussy had left her crib for the company of others of the feline race, leaving her alone. And thus followed the hunt for pussy, the capture, the awakening of the dog, and the shout, the bark and the mew.

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[1] Eighth Grade. McPherson School, Chicago.

6. A Picture Study. Pictures afford excellent material for language exercises in the intermediate grades, but their study there must necessarily be limited to telling the story which the picture represents. Picture studies should be continued in the grammar grades, where a more critical study should be made and a more minute description of the picture be given. These studies should be upon the works of the great artists. There may be but little originality in the descriptions for criticism, but many of the terms used will be new, and the study will lead the pupils to contemplate works of beauty. The picture of Landseer and his dogs is a good illustration of the class of works which can be used. In the picture opposite, *The Connoisseur*, the artist represents himself sketching, with two dogs intently following his progress. This is one of Landseer's best portraits.

Preliminary to writing a description of the picture, study it in the class.

(1) Have the class learn something about the life and the other works of the artist.

(2) Compare Landseer with other noted painters of animals. Is he considered the foremost painter of animals? Why?

(3) Learn whether or not the pupils have seen any pictures from other noted animal painters. If so, have them name them. (It should be understood that reproductions of these works, engravings or photographs, are here intended.)

(4) Make a critical study of the picture. What do you like best in it? Why? What would you change? Why? Is there anything unnatural about the picture? If so, what? Give your opinion of Landseer's temperament and character as revealed in the portrait.

In conducting an exercise of this nature, allow the pupils the utmost freedom of judgment and expression. Of course, many crude opinions will be given, but by careful questions and suggestions pupils can be led to revise them. A uniformity of opinion should not be the goal sought, for a picture seldom appeals to two people alike, and one result of this kind of picture study should be to strengthen the individuality of the pupils.

(5) Following the study, let the pupils write a description of the picture. This description should be as complete and critical as they can formulate. For additional work, let the pupils write an imaginary biography of each of the dogs or tell some story about one of them.

7. Literature and Language. The power of thought gained through reading is an invaluable aid to expression. From what and how he reads the pupil acquires a vocabulary and a mental attitude which influence his thought and expression in all subjects. On pages 25, 26, Sections 24, 25, and on page 212, Section 4, are found full directions for studying literary selections, so far as that study pertains to reading. The language part of the work consists in the pupil's making the literature read matter for thought and expression, conversation, telling the story in their own words, memorizing the chief portions of the selections and writing descriptions of the scenes and characters portrayed. On pages 25, 26, Sections 24 and 25, directions for home reading and for ascertaining the contents of a book have been given. These lines of reading should constitute valuable aids to the language work. The pupils should be influenced to read standard works of fiction — Dickens, Scott, Hawthorne, Howells and other authors of repute. The reading of standard authors enriches the vocabulary and improves the style. Written sketches of such characters as David Copperfield, Scrooge, Little Nell, Richard in *The Talisman*, Jeanie Deans, Ellen in *Lady of the Lake*, Longfellow's Elizabeth and Evangeline, form excellent exercises for seventh and eighth grade pupils.

A book review should be written occasionally. To make this exercise pleasant, as far as possible allow the pupils to choose the books. Show the class how to give in a few words a clear idea of the purpose and contents of a book, and help them to select simple, critical expressions in which to convey their personal impressions. Encourage them to be frank, modest and sincere in giving their opinions, and seize every favorable opportunity to call attention to good books. The best of the reviews and character sketches prepared by the pupils should be read before the school.

8. Exposition. Exposition is explanation or the setting forth of the writer's or speaker's idea of a subject. The simplest form of exposition is a mere definition of the term used; as, *a telephone is an apparatus for conveying the sound of the voice a long distance.* Much of the language work is in the form of exposition, though never called by this name. In the seventh and eighth grades, attention should be given to somewhat extended exposition, oral and written. General reviews in geography, history, and a comprehensive review of a literary selection which the class has studied furnish an abundance of material for this line of work. Other profitable fields are community civics and studies in occupations. In many places these subjects have no special place in the curriculum, and hence the treatment of them in the composition class adds distinctly valuable knowledge to the pupils' equipment. Expression should follow careful research, making of notes, which should be kept in folders, and outlining.

Oral exposition is simply making the most extended use of the topical method of recitation of which the class is capable; a written exposition is committing this recitation to writing. Exposition trains the pupils to think consecutively, to arrange their work in logical order, to follow a subject through to the end, and to express themselves clearly. Oral exposition also gives them the confidence and the ability to express their ideas in the presence of others, a valuable acquisition for all young people.

(a) ASSIGNMENT. If the pupils have received proper training in the sixth grade, they are prepared for this work; if not, they will need considerable encouragement and assistance. At first the same topic should be assigned to the entire class and the required work should be definitely pointed out (see Volume III, page 210). Later, a number of topics can be assigned by dividing the class into groups and assigning a topic to each division; in the eighth grade it is frequently advantageous to assign to each member of the class a special topic. Let each pupil state the exact purpose of the work he is undertaking. The oral recitation conducted on this plan forms a good foundation for written exercises.

(b) PLAN. In both oral and written exposition, outlines which have been constructed as the subject was developed are helpful, but outlines found in text-books or prepared for the class by the teacher are a hindrance, since they relieve the pupil of the necessity of organizing the subject—one of the most valuable features of the exercise. The following outline shows how a subject may be treated in exposition. An exposition of the subject given here should, of course, be preceded by one or more geography lessons on the coal regions.

COAL

I. FORMATION.
  1. Decayed vegetation.
  2. Heat and pressure.
  3. Coal measures.
II. VARIETIES.
  1. Anthracite.
  2. Bituminous.
  3. Cannel.
  4. Lignite (compare with peat).
III. DISTRIBUTION.
  1. United States.
  2. Other countries of North America.
  3. Europe.
    (a) Great Britain.
    (b) Countries on the Continent.
  4. Other parts of the world.
    (a) Asia.
    (b) Africa.
    (c) Australia.
    (d) Islands.

IV. PRODUCTION.
  1. United States.
  2. Great Britain.
  3. Other countries.

V. MINING.
  1. Position of the veins of coal.
  2. The shaft.
    (a) Size and divisions.
    (b) Hoisting cages.
    (c) Other appliances.
  3. Plan of the mine.
    (a) Main galleries.
    (b) Other galleries.
    (c) Ventilation.
    (d) Dangers.
  4. Mine appliances.
    (a) Tramways.
    (b) Electric locomotives or horse power.
    (c) Lights.
    (d) Drills and other tools.
    (e) Safety lamps.
    (f) Coal breakers.
    (g) Coal washers.

VI. USES OF COAL.
  1. Fuel.
  2. Manufacture of gas.
  3. Manufacture of coke.
  4. Power.

VII. RELATION OF COAL TO THE COMMERCE AND INDUSTRY OF THE THE WORLD.

Each of these large divisions constitutes sufficient material for an exercise, or, in case the subject is distributed among different members of the class, each division can be assigned to a pupil. Division VII gives opportunity for the preparation of an excellent essay or talk before the school and class.

9. Dramatization. If for no other reason, because of the amazing popularity of the moving-picture theatre, the school should train pupils to appreciate good as contrasted with poor plays. This can be done by making plays as well as by reading them. Actions which the pupils have witnessed may be described and then written out in dramatic form. Literature study will provide many suitable incidents. Occasionally the class may prepare a play for the whole school. *Rip Van Winkle* lends itself readily to dramatic presentation. Incidentally the pupils will make large gains in expression and in formal technique of writing.

10. Debates. There are two sides to most questions, and pupils in the grammar grades often hold opposite opinions concerning the value of the different literary selections studied, the solution of problems presented in history, the relative prominence of public men, and many other topics that arise in the pursuit of their studies. Many of the pupils in the seventh grade, and practically all in the eighth grade, are able to maintain their opinions on any of these questions with intelligent reasons. The teacher should make use of these conditions occasionally by planning a debate. At first the discussion should be very simple. It may be confined to two pupils, one on a side, or the class may be divided into two divisions, one group being asked to write a paragraph on one side of the question and the other a paragraph on the other side. After the class understands how a debate should be conducted, two or three pupils may be appointed on a side, and after the formal discussion by those appointed, each member of the class may be given opportunity to express his views on the question.

Debates are valuable only to the extent that they enable the pupils to gain certain definite ends, chief among which the following may be named:

(a) KNOWLEDGE OF ARGUMENTATION. Argumentation is the setting forth of reasons and the conclusions drawn from them, for the purpose of leading another to accept the views of the one presenting the argument. Pure argumentation consists only of reasons and their conclusions, arranged according to their natural relations. It appeals to the reason alone. But in the broadest meaning of the term, argumentation includes persuasion, that is, an appeal to the emotions, also description, wit and anecdote. In short, the skilful debater resorts to all forms of composition by which he can appeal to those whom he wishes to convince. Therefore, the debate more than any other exercise furnishes an opportunity for the pupil to use all his powers of expression.

(b) LOGICAL ARRANGEMENT. Complex thoughts are used in a course of reasoning. Every thought of this kind must be analyzed, and the parts set in their proper order and relation. The important element of each thought must then be selected and its bearing upon the question must be considered. When these important elements have been set in order and compared, some, perhaps one, of them will determine the conclusion. Following these basal elements and conclusions are others of secondary importance that are deduced from them, and these may be followed by still others of less import; yet all are necessary to complete the argument and to make the basal reasons appear in their strongest light. Before the pupil's argument can be convincing, the reasons and conclusions must be arranged in the order of their importance and of their true relations; that is, each conclusion should form a new reason that should lead to another conclusion, and so on until the point to be proved is reached.

To pupils in the grammar grades, the peculiarities, anecdotes and striking features of an argument often appear to have greater importance than the basic principles upon which the argument must rest, and at first they need assistance in arranging their arguments. Writing the formal steps in reasoning is an excellent help in teaching eighth grade pupils to arrange their thoughts logically.

(c) POWER OF EXPRESSION. In debate, the pupil needs not only to state his views but also to present them with such force and effect that he will convince others; therefore clearness, accuracy and persuasive power are all necessary, and those who engage in debate must study the method of presentation as well as the arrangement of the argument.

(d) A BROADENING INFLUENCE. Every successful debater must be able to look on both sides of the question without prejudice. Many young people need special training along this line. Those who are unable or unwilling to see the strong points on the opposite side of the question, and prepare for them, seldom succeed in argument. As an illustration of the attitude of your pupils towards great questions, obtain the opinions of the history class on the merits of the British side of the controversy which resulted in American independence. How many of them see any excuse for British aggression? Again, how many pupils in the North can see the Confederate side of the Civil War, or how many in the South can see the Federal side? What is true of the attitude of these young people in regard to questions of this nature is equally true of their attitude in regard to minor questions, and frequently in regard to questions in which the school or the pupils themselves are personally interested.

(e) PLAN. The points discussed above, as well as others, are brought out in the following plan for debating the question, *Resolved, that the American colonies were justified in separating from Great Britain.*

The arrangement of the points on each side of the question in parallel columns is recommended, because it shows both sides of each phase of the question and also shows how one condition led to another:

AFFIRMATIVE	NEGATIVE
1. The attempt of Parliament to tax the Colonies was against the resolution of the first House of Commons, which in 1265 decreed that taxation without representation was unjust and illegal.	1. Parliament claimed that the French and Indian War was undertaken largely in the interests of the colonies in America, and that they had not borne their proportionate share of the expense.
2. The Colonies paid more than one-half of the expense of the French and Indian War.	2. The rate of taxation at home was already so high that Parliament feared to increase it.
3. The Navigation Acts had crippled the commerce and manufactures of the Colonies and	3. The authority of Parliament over the colonies was supreme. 4. No country ever had allowed

caused the people much hardship.

4. The attempt of the king to use his Colonies as a means of playing off one political party against another for his personal advancement was extremely irritating to the Colonies.

5. Previous to the attempt to tax the Colonies the officers of the Crown had often been overbearing and had caused much unnecessary trouble and hardship.

colonies representation in the home government and the Colonies could not justly claim such privilege.

5. The political party in England then in control claimed that representation was by classes, not by districts, and in accordance with this claim the Colonies were virtually represented in Parliament.

6. The proposed rate of tax was very light.

7. The resistance to royal authority by the Colonists made extreme measures necessary.

11. Correspondence. On pages 198-201, in Section 22, we have given a method for teaching letter writing, but there are certain matters pertaining to correspondence to which the pupils of the grammar grades should have their attention called, and upon which they should receive training, because previous to this time they are not sufficiently mature to understand the bearing of these matters upon correspondence:

(a) OMISSIONS. Every business house can bear ample testimony to the shortcomings of their correspondents. Some of the most frequent instances of this kind are the following:

(1) Failure to name the town and state from which the letter is written, or to which the reply should be sent; as, *Danville, January* 25, 1916. There are numerous Danvilles in the United States, and unless the postmark on the envelope is sufficiently legible to enable the recipient of the letter to learn the name of the state, he may not know where to send the reply.

(2) Failure to sign one's name in the same way at all times; as, Anna E. Smith, A. E. Smith, A. Smith, A. Ellen Smith. It is almost impossible for a firm burdened with a large correspondence to determine whether these signatures

belong to the same person or to different persons, unless considerable time is expended in going through a large file of letters.

(3) Failure of the writer to sign his name at all; as, *Very truly yours,* ——————————. This frequently occurs when the letter contains a remittance, and, perhaps strangest of all, this is not an uncommon fault among teachers. The writer of such a letter, failing to receive a reply, usually accuses the firm of being dishonest and receiving money on false pretenses, when, doubtless, the remittance is carefully filed away with the letter, awaiting a second communication which may possibly contain the writer's signature. Young people should not be allowed to leave the grammar grades without receiving such training as will prevent these errors, and at the same time make them competent correspondents. Many young people fail of promotion in business offices because they cannot write a good letter.

(b) LETTERS OF APPLICATION. Many a young person has failed to secure a desirable position because of his letter of application. The ability to write a satisfactory letter of this kind is an accomplishment acquired only by practice. Pupils should understand what the essential facts of such a letter are and how they should be arranged. These facts and their order should usually conform to the following plan:

(1) Preparation for the position, including the age of the applicant.

(2) Previous experience, with names and addresses of former employers.

(3) Names and addresses of those to whom the prospective employer may apply for further information.

Conditions may be such as to require the addition of other facts, but, in general, letters of application should be short and to the point. Above all, they should be couched in simple language, and the form, capitalization, spelling and arrangement in paragraphs should be as faultless as possible. Study the following model:

3150 Magnolia Avenue, Chicago, Ill.,
April 24, 1916.

The Caxton Company
378 Wabash Avenue
Chicago

Gentlemen:

Having seen in the Tribune your advertisement for an assistant office clerk, I respectfully apply for the position, and am confident of my ability to fill it satisfactorily.

I am nineteen years of age, a graduate of Lake View High School and of Bryant & Stratton Business College.

While attending the high school, I worked a portion of the time as general office clerk for J. W. Thomas & Company, to whom I respectfully refer you. I also enclose letters of recommendation from the principal of Lake View High School and the Bryant & Stratton Business College, and I have the permission of these gentlemen to refer you to them for a knowledge of my work while a student in those schools.

If you will permit me to call, I think I can satisfy you of my ability. I hope for a favorable reply.

Yours very truly,.

The pupils should write letters of application for various positions until they are thoroughly acquainted with the requirements of such letters.

(c) OTHER LETTERS. Letters of introduction, of recommendation, of acceptance of positions and of refusal of positions should also receive careful attention. That so many young people are deficient in correspondence of this nature is due largely to lack of proper training in the schools.

Teachers are frequently called upon to write letters of recommendation, and a typical form is here given. Models of nearly all forms of letters are found in all good language books for grammar grades, and it is not necessary to insert others here:

LETTER OF RECOMMENDATION

Seattle, Washington
May 1, 1916.

To Whom It May Concern:

I take pleasure in recommending ...., who has been a pupil of this school for .... years. He (or she) has been punctual and regular in attendance, industrious and successful in his (or her) work, and courteous and well behaved in every way. He (or she) has been one of our very best pupils, and I am confident merits your most favorable consideration.

Respectfully,

........................Teacher.

12. Telegrams. Telegrams are used in cases of emergency, when one wishes to communicate with another in the shortest possible time. The expense of a telegram depends upon its length and the distance of the point to which it is sent. The regulation length is ten words, and an extra charge is made for each additional word. Ask the pupils in the eighth grade to write a telegram, each one stating that he is to reach Chicago at a certain hour on a given day, over a certain line of railway, and asking you to meet him. How many succeed in limiting the message to ten words and making it intelligible? This experiment will show to what extent pupils need practice in writing telegrams. Occasional exercises should be given until the pupils become proficient in this work.

13. Original Composition. In the lines of work previously discussed, most of the material used had been organized before it was worked over by the pupils. In the original sketch, the pupil organizes his material from the beginning. It therefore gives him much greater latitude in the exercise of his powers of originality and in following his literary tastes. Pupils in the grammar grades should be given frequent opportunities to prepare original sketches. The theme should always be one that the pupil understands and in which he is interested. It may be real or imaginary, such as a trip which he has taken to a city, a picnic party, or some other experience. The imaginary theme may consist of supposed journeys to foreign countries, the pupil's idea of some character of literature, or an original story. The teacher needs to be in close touch with her pupils, so that she may know what themes are best suited to each, if she would obtain the best results from exercises in original composition. The same plan used with other forms of language work in these grades should be applied to this. The only difference is that the thought and plan are drawn from the pupil's experience instead of from the experience of another.

GRAMMAR

14. The Pupils' Preparation. With scarcely an exception, the language books in current use introduce the elements of grammar in the intermediate grades. By the time the pupils reach the fifth grade they have learned that a sentence is composed of subject and predicate, and a strong class may have learned to distinguish modifiers and connectives. They should learn in the sixth and seventh grades the parts of speech, what a phrase is, what a clause is, that phrases and clauses are used as parts of speech, and that a verb should agree with its subject in person and number. If the class has received the right kind of instruction, there will have been learned the more elementary facts of grammar in connection with the regular language work by the time the seventh grade is finished.

15. Reasons for Studying Grammar. Formal grammar has its place in a course of study, and it should always be considered a part of the plan for language work. Grammar should be studied in the eighth grade, for the following reasons:

(a) It Furnishes a Standard for Comparison. If the pupil understands the principles and rules of grammar, he has a fixed standard with which to compare his language, and a constant comparison with this standard is a great aid in perfecting his English.

Again, during their entire school course the pupils have listened to, read, and memorized many extracts from the best literature. While they have often seen the clearness and felt the force, in these selections, they have never known why they possess these qualities. Applying the principles of grammar to such selections gives the class some insight into what is essential to effective writing. A knowledge of grammar furnishes the pupil with a standard of comparison, then, not only for his own language, but for that of others.

(b) IT PROVIDES PRACTICE IN REFLECTIVE THINKING. No other subject in the elementary course of study excels grammar in the opportunity it affords for reflection. It requires close and careful thinking to discern the attributes of each element of a sentence or the value and function of each word, and grammar should be so taught as to call for exact observation, comparison and judgment.

(c) THE INTERPRETATION OF LITERATURE. The great works of literature can be enjoyed only to the extent of the reader's ability to comprehend the thought of the writer, and a careful scrutiny of grammatical relationships is often necessary to the understanding of passages in them; young people should acquire this power before completing their work in the grammar grades.

(d) UNDERSTANDING OTHER LANGUAGES. When pupils enter the high school and begin the study of foreign languages, they find that a knowledge of English grammar is a great help in enabling them to understand these languages. We can also add that the pupil who enters high school without a knowledge of grammar is placed at a disadvantage in all his English work.

16. Dislike for the Subject. To many pupils, especially boys, grammar is thoroughly distasteful, and the teacher who is able to discover and remove the causes for this dislike will accomplish much for her pupils. The reasons for this attitude most frequently given are, "I can't see any use in studying grammar," and "I can't understand it." All too often the teacher attempts to frown these reasons down, but this is a serious mistake. The reasons given express the boy's honest convictions, and he is no more to be blamed for not taking an interest in a subject which he cannot understand and in which he sees no value than are his elders for their lack of interest in many of the public questions of the day.

The dislike for grammar can usually be traced to two sources — its introduction before the pupils are prepared for it, making it impossible for them to understand the subject as presented, and failure to teach the subject so as to enable the pupil to see its vital connection with his common speech. Attention given to the child's sensations and experiences and to their proper expression in words will lead him to see the reasons for grammatical classification and rules, and may interest him in them. Concerning the first of these causes, it should be said that formal grammar as a distinct study has no place below the eighth grade. Some of the fundamental principles and rules can be taught in the seventh grade, but this should be done in connection with composition lessons. Formal grammar requires a maturity of judgment not attained by seventh grade pupils. Moreover two or three lessons a week for a year are all that is necessary to teach as much grammar as pupils need. The second cause may be removed by studying the actual language used by the pupils in conversation, as well as in written work, and reconstructing what is faulty.

17. Plan. Grammar can be pursued most successfully with the text-book in the hands of the pupils. If the book is at all suitable, its plan should be followed; otherwise, the pupils will become confused. There are, however, several points which the teacher should bear in mind. These are the following:

(1) Before beginning the work upon the text-book, review the principles previously studied, to ascertain what pupils know.

(2) Begin the regular lessons at the stage of this subject indicated by this review. Do not waste time on teaching again what the pupils know.

(3) Let the first study be with the parts of the sentence. To begin with the study of words is illogical and leads to a dislike for the subject.

(4) Remember that the things to study are thought relations and the consequent relations of words. Follow

this with the study of individual words considered as parts of speech.

(5) Use the inductive method so far as possible. The pupils can discover all the larger and more useful principles for themselves and will profit by doing it. Put typical examples before the class, develop the problem and guide to the solution.

(6) Lead the pupils to make practical application of each principle and rule learned. For this purpose go over compositions previously written.

(7) Do not begin too soon the more critical work of exhaustive analysis. Pupils should be thoroughly prepared for this work before it is introduced.

(8) Keep ever before you and before your pupils that the goal to be reached is the ability to make good sentences and to understand and appreciate the sentences of others.

18. Analysis of Sentences. Grammatical analysis consists in separating a sentence into its elements and showing the thought relations which these elements bear to each other. If the analysis is exhaustive, it also considers the logical value and function of each word in the sentence. Hold this idea constantly before the class and never allow the pupils to get a different idea of the function of this phase of grammar work. Analysis should never be merely formal.

(a) PLAN. As far as possible, follow the plan found in the text-book. If, however, this embraces more detail than you wish to use, the undesirable portions can be omitted. The plan should be simple, logical and easy to follow. At first guide the pupils by questions which will bring out the thought relations represented by the elements of the sentence. The following model indicates a method which soon enables the pupils to rely upon themselves:

> "The castled crag of Drachenfels
> Frowns o'er the wide and winding Rhine."

What is talked about? *The castled crag of Drachenfels.* What is said about it? *It frowns o'er the wide and winding Rhine.* What single word tells what is talked about? *Crag.* What single word tells what is said about *crag? Frowns.* What word describes *crag? Castled.* What words tell where the crag was? *Of Drachenfels.* What words tell where it frowned? *O'er the wide and winding Rhine.* What words describe *Rhine? Wide and winding.*

If simple, easy sentences are selected for the first few lessons, the pupils will soon learn to classify the words into the following groups: those representing subject ideas; those representing predicate ideas; those representing modifying ideas, and those representing connecting ideas. The next step is to associate the appropriate name with each group, as subject, predicate, modifier, connective. If this method of analysis is used, it will be impossible for the pupil to employ the terms commonly employed in grammatical analysis without having them become significant from the beginning, and if this is done there will be very little difficulty in securing the interest of the entire class.

As soon as the pupils are able to analyze detached sentences, they should begin the study of related sentences, for it is in their ability to analyze sentences as they occur in literature that they will find a practical use for analysis. Many pupils who can analyze detached sentences readily have considerable difficulty with related sentences. They are unable to see the thought relation which one sentence sustains to another in the paragraph.

(b) DIAGRAMS. The abuse of diagrams, which were so common a few years ago, has led to their general condemnation; yet, when properly used, the diagram is often of great assistance. The pupil who says that he can diagram a sentence but cannot analyze it does not understand what analysis means. The diagram is a form of analysis, not a substitute for it. It shows at a glance the thought relations expressed by the elements of the sentence, and before the pupil can place these elements in their proper position in the diagram he must understand these relations. The use of the diagram often saves time. It enables each pupil to place his idea of a sentence before the class so that all can see it, and this much more quickly than he can do it by analyzing the sentence orally. For these reasons an intelligent use of the diagram is to be commended. The danger in its introduction is that it will be relied upon too much.

19. Parsing. Parsing is extending analysis to minute particulars. Pupils often obtain the idea that it is something entirely distinct from other lines of work in grammar. A definite order of procedure should be adopted and then followed. When the pupils begin parsing they should be required to give the reason for each step, as in parsing *knowledge* in the sentence, *Knowledge is useful.* The pupil should say: *Knowledge* is a common noun, because it is the name of one of a class of objects; third person, because it is spoken of; singular number, because it means but one; without gender, because it does not indicate sex; nominative case, because it is the subject of *is useful.*

As soon as the reasons for the properties of each part of speech are thoroughly understood, they can be omitted in the parsing. If, however, the pupils become careless, you should return to the practice for a short time.

As soon as the pupils are familiar with the form and process of parsing, it becomes tiresome and the exercise should be restricted to giving the construction of the words; that is, to telling the logical value and the function of each word, as in the sentence, *Knowledge is useful, knowledge* is a common noun, subject of the predicate *is useful.*

20. Grammar and Language. Language work should not cease when the work in grammar begins, but the two should be carried along together. During their study of grammar the pupils should so perfect their language that they can express themselves, in speaking or writing, with ease, fluency and accuracy upon any subject which they understand.

21. The School Literary Society. The literary society affords one of the best means of making application of the principles and rules discussed in this and the preceding chapter. It also provides a change from the regular routine of school work and possesses the third advantage of placing the conducting of affairs in the hands of the pupils. Pupils in the grammar grades like to feel that they are doing something, and a well conducted literary society always increases their interest in their work. Wherever the pupils are able with the teacher's assistance to form and maintain such an organization, they should be encouraged to do so.

(a) THE TEACHER'S PART. The teacher should work out a plan which will be within the ability of the pupils to carry into effect before suggesting the organization of the society. She may then present the subject to the pupils for their consideration stating that in two or three days she will ask them to vote upon the proposition. If a majority vote in favor of the proposition the society will be organized, but if a majority vote against it they will give the matter no further consideration at that time. During the discussion by the pupils the teacher should hold herself in readiness to answer any questions and to give any explanations asked for, but she should not try to influence the pupils in their decision. It will be far better to let them vote the proposition down than to lead them to feel that the organization has been forced upon them.

If the majority is in favor of the enterprise, it then becomes the part of the teacher to exercise rare tact and skill. She must now, while remaining in the background, virtually control the organization. This can be done if she is wise in making suggestions.

(b) ORGANIZING THE SOCIETY. Children are impatient of delay, so it will be well to organize the society as soon as practicable. The following steps are recommended:

(1) Have the pupils select a committee of three or five, of which the teacher shall be one, to prepare a plan of organization, with the understanding that this plan is to be reported to the school at a definite time.

(2) Make the organization as simple as possible. All the officers necessary will be a president, vice-president, secretary and treasurer and a program committee.

(3) Prepare a set of simple rules governing the time of meeting, the scope of work the society may undertake and the order of business. One rule should be that the teacher's approval must be secured before any action which the society may take can be carried into effect.

(c) SUGGESTIONS. (1) The frequency of the meetings should be carefully considered. The pupils, in their enthusiasm, will probably want to have more meetings than they can prepare for. At first every third or fourth Friday afternoon will be as often as meetings should be held.

(2) See that the programs give some pupils from each grade in the room a part at each meeting.

(3) Beware of too long programs.

(4) See that the officers chosen are trained in their duties so that they can discharge them without hesitation or embarrassment.

(5) Give the entire room some instruction on the parliamentary rules which are used in every assembly.

(6) See that the rules provide for a short term for officers so as to give as many pupils as possible opportunity for holding the offices. Ordinarily the term should not extend beyond two regular meetings.

(7) Exercise tact and patience. Do not expect perfection, but encourage every honest effort. Do not dwell on failures, but point the way to success.

(d) DUTIES OF OFFICERS. (1) *The President.* It is the duty of the president to preside at all meetings of the society, to see that the business of the meeting is dispatched in the order prescribed in the rules of the society, to keep order and to appoint such committees and other officers as the rules require, or as he may be directed to do by vote of the society.

(2) *Vice-President.* It is the duty of the vice-president to discharge the duties of the president when that officer is absent.

(3) *Secretary.* It is the duty of the secretary to keep a record of each meeting and to report the same at the next

regular meeting. After this report is read any errors it may contain should be corrected by the society. The report should then be approved. This is done by the president's saying, "All who will approve the report of the secretary will say *I*; contrary *no*. The *I's* have it and the report is approved."

The secretary should read all communications addressed to the society and keep all records and other documents belonging to it. The secretary should be provided with a book in which to write the reports of the meetings. This book should be purchased with funds raised by the society.

(4) *Treasurer.* The treasurer should receive all money belonging to the society, paying it out only on order of the president or vote of the society. At stated terms he should make a report showing how much money has been received and from what sources, how much has been paid out and for what purposes, and the balance on hand.

In small societies the offices of secretary and treasurer are often combined in the same person.

(e) PARLIAMENTARY LAW. The following rules of order are used in all assemblies. They are all the society should attempt to use until they become conversant with methods of conducting the meetings.

(1) *Obtaining the Floor.* When a member wishes to make a motion he should rise in his seat and address the president as *Mr. President.* The president then recognizes the member by speaking his name. He can then state his business. Any member attempting to address the society or to make a motion without first obtaining the recognition of the president is out of order, and should be requested to take his seat.

(2) *Motions.* Entertaining and putting motions and taking votes upon them will be the most perplexing duty that the president has to perform. However, the simple rules here given will enable him to steer clear of all difficulties, provided he follows them in the order given.

(a) Every motion must be made by some member of the society, seconded by another member and stated by the presiding officer before any one can speak to it. Suppose the society wishes to purchase a book, for the secretary. John Adams rises in his seat and says, "Mr. President." The president replies, "John Adams." John then says, "I move that the secretary be given permission to purchase a book in which to write the reports of the meetings."

Mary Brown rises and says, "Mr. President." The president replies, "Mary Brown." Then Mary says, "I second the motion."

The president then says, "It has been moved and seconded that the secretary be given permission to purchase a book in which to keep the reports of the meetings of the society. Is there anything to be said on the question?"

Tom Walker rises and says, "Mr. President." Having obtained recognition by the president he says, "I think the price of the book should be included in the motion. I think we ought not to pay over twenty-five cents for the book."

John and Mary readily agree to this and the president says, "All in favor of the motion will say *I*; all opposed will say *no*. The *I's* have it and the motion is carried."

(b) AMENDMENTS. Suppose Tom had said, "I move to amend the motion by limiting the price to twenty-five cents," and another member had seconded the amendment. How is the president to proceed? He would call for the vote on the amendment first. If that carried he would then take the vote on the motion as amended.

"All who favor the amendment will say *I*; opposed, *no*. The *I's* have it and the amendment is carried."

"All who favor the motion as amended will say *I*; opposed, *no*. The *I's* have it and the motion as amended is carried."

Only one motion can be before the society at one time. Any member trying to make a motion when another one is before the society is out of order, unless his motion is in the form of an amendment to the motion under discussion, or is made as a substitute for that motion. Then the second motion must be voted on first.

(c) VOTING. There are three ways of voting: by ayes and nays, by division of the house and by ballot. The first is the most common and is the one used in the illustrations given above. The second may be used when the presiding officer is unable to tell by the ayes and nays which side has a majority. He then appoints two members as tellers and asks all in favor of the motion to stand and be counted by the tellers. He then asks all opposed to stand. The count shows which side has the majority. In voting by ballot, the ballots are written on slips of paper and counted by tellers appointed by the president. The regular officers of the society should be elected by ballot.

22. Aids. The following works designed especially for teachers will be found valuable:

The Teaching of English. Percival Chubb. 411 pages. The MacMillan Company. This is a most helpful book in giving the teacher an ideal towards which to work. It also contains many practical suggestions and an outline of a course in English extending from the firs-grade through the high school.

The Teaching of English. Paul Klapper. 263 pages. D. Appleton & Company. Much more specific in its suggestions than the book by Mr. Chubb, and contains excellent lists of selected references.

The Elementary Course in English. James Fleming Hosic. 150 pages. The University of Chicago Press. A comprehensive outline of theory, with references, is followed by detailed suggestions as to methods and materials for each grade.

Special Method in Language. Charles A. McMurry. 192 pages. The MacMillan Company.

The Problem of Elementary Composition. Spalding. 114 pages. D. C. Heath & Company.

Some of the more recent series of language books will also be found of great assistance in furnishing plans for lessons and providing supplementary exercises. Every teacher should have one or two sets of such books besides those used in the class. The following series are recommended:

The New Webster-Cooley two-book course in language, grammar and composition. W. F. Webster and Alice Woolworth Cooley. Book One, 270 pages; Book Two, 384 pages. Houghton. Mifflin & Company.

Everyday English. Jean Sherwood Rankin. The Educational Publishing Company. Book One, 232 pages; Book Two, 342 pages.

The Hosic-Hooper Elementary Composition Series. James Fleming Hosic and Cyrus Lauron Hooper. Book One, 277 pages; Book Two, 296 pages. Rand McNally Company. The grammatical material has been carefully selected and is vitally related to composition work throughout, with a summary at the end.

The following grammars are recommended for reference:

A Modern English Grammar. Hubert Gray Buehler. 300 pages. Newson & Company. Excellent, both as to material and as to method.

An Advanced English Grammar. George L. Kittredge and Frank E. Farley. 333 pages. Ginn & Company. An authoritative reference book for the teacher.

Maxwell's English Grammar. William H. Maxwell. 334 pages. D. Appleton & Co. This is a comprehensive work, therefore of great value for reference; but it is too difficult for use as a text-book in the eighth grade.

Correct English: How to Use It. Josephine Turck Baker. 263 pages. Sadler-Rowe Company. This grammar contains many suggestions on the correction of errors and gives numerous illustrations in parallel columns of the correct and incorrect use of words. In this respect it differs from other grammars in general use.

TEST QUESTIONS

1. (a) From the story of Marquette select five topics which could be used as the subject for a written exercise. (b) Prepare such an outline of one of these subjects as you would expect seventh-grade pupils to use.

2. (a) Which do you consider the more difficult, description or narration? Why? (b) Which is the more difficult to describe, a real or an imaginary object? Why?

3. Select a topic from *Knickerbocker Life in New York* and prepare an outline for an essay upon it.

4. What would you expect to accomplish by exercises in brief description in your eighth grade?

5. What would you expect your pupils in the eighth grade to gain in language from a study of *Evangeline, The Great Stone Face*, or any other literary selection of equal grade?

PLANS AND PROJECTS FOR GRAMMAR AND COMPOSITION

By Dr. Charles A. McMurry

FOURTH YEAR

In the fourth grade there should be a good deal of oral language work in order to teach the use of new words, correct bad habits of speech and to enable children to speak fluently. The study of short masterpieces within the pupils' comprehension is an aid in enlarging their vocabularies and in teaching them to choose apt words. In each oral recitation the teacher should note incorrect expressions used by the pupils. At the close of the recitation she should call attention to these in a tactful way and lead the class to correct them. Frequent drills upon the correct forms will help to fix them in the pupils' minds. In connection with these plans make a careful study of the chapter *Language and Composition* and *Composition and Grammar.*

SEPTEMBER

First Week. Ask the pupils how many remember the stories of *The Fox and the Stork, The Crow and the Cheese* and *The Dog and His Shadow.* Have them tell the stories.

Develop the meaning of the word *fable*, then let the class tell what the above stories teach. See if anyone knows the name of the man who told most of the fables we have read. Tell the story of Aesop:

About 600 years before Christ was born, there lived in Greece a slave by the name of Aesop. He was intelligent, good-natured and witty, and made friends wherever he went by telling stories, many of which were about animals.

One day he and two other slaves were taken to the market to be sold—just as we sell horses and cattle today. Presently a rich man, whose name was Xanthus, came to look at the slaves. He questioned the other two men about what they could do. They were anxious to belong to a wealthy man, so they told of wonderful things they could do. When Xanthus asked Aesop what he could do, he said there was nothing left for him to do, since the others could do everything so well. Then the rich man said, "If I buy you, will you be honest and faithful?" Aesop replied that he would be that anyway. Then the man asked if he would promise not to run away. Aesop said, "Did you ever hear of a bird in a cage that promised to stay in it?" Xanthus liked his answers so well that he bought Aesop.

Let the pupils reproduce the above story orally. When this has been well done, tell the following:

Once when Xanthus was going on a journey he had his servants tie up in packages the things he wished to take. When he was ready, he ordered each slave to pick up a bundle and carry it. Aesop had previously asked if he might carry the lightest package and had been given permission to do so, for he was the master's favorite. He was called to take his choice before the rest chose theirs. He picked up a big basket filled with bread, the largest package of all. The other slaves all laughed when he made this choice and thought he was not very bright.

When noon came Aesop was very tired. His package had been quite a tax on his strength. After everyone had rested, dinner was served and half the bread was eaten. At night the rest disappeared and Aesop had only an empty basket to carry, while the packages which the other slaves carried grew heavier and heavier each hour of the journey. Because Aesop was so clever he was given his freedom.

Let the class retell both stories of Aesop. Note any grammatical errors and have them corrected. Let the class go to the board and write sentences about Aesop. When the pupils have retold the stories well, let them write the last one. The teacher should work with the class, putting on the board any difficult words and assisting in the capitalization and punctuation. When completed look the stories over carefully, marking the errors, then have the pupils copy them and correct their mistakes.

Review the use of capitals and periods.

Before asking the pupils to prepare written work decide upon the form to be used, and insist upon a rigid adherence to that form. Excellent directions for this work will be found under (b) *Form*, page 183.

Second Week. Discuss the use of capitals in the Aesop story; observe the use of question mark and quotation marks. Dictate sentences from Aesop.

Review the common errors noticed in telling and writing the story of Aesop; observe and illustrate the use of *is*, *are*, *was* and *were*.

Begin the study of Helen Hunt Jackson's *September* (See Vol. I, p. 160) and discuss the fall flowers mentioned. Memorize one of the verses in *September*. Notice the use of capitals and punctuation. Continue the description of fall flowers.

Write out the verse from memory, then correct your own mistakes, comparing with reader.

Study the milkweed on an excursion. Write a description of the milkweed. .

Third Week. Teach first part of the story of Ceres:

Long ago the Grecians were a highly-cultured people. They loved beautiful things, and spent much of their time out-of-doors because they enjoyed the beauty of the clouds, the flowers, the trees and all nature. As they looked at these wonderful things they naturally wondered how they came to be, and so they were led to conceive fanciful tales of powerful gods and goddesses who ruled the world and cared for the plants and animals.

Ceres, they believed, was the Earth Mother. With a wreath of poppies on her head, a sheaf of grain in her arms and a sickle in her hand, she rode in her chariot drawn by winged dragons to every part of the earth. Whenever she saw that the fields needed her, she stopped her chariot, stepped out and cheered the flowers, the grain and the trees by her wonderful presence.

It was Ceres who taught man to prepare the soil, plant the seed, harvest the grain and store it. Each spring she was happy to see the young sprouts appearing, and each fall she rejoiced over the abundant sheaves of golden grain, the luscious fruit and the autumn bouquets of goldenrod and asters.

Ceres had one daughter whose name was Proserpina. She loved the child dearly, but each day while she was out in her chariot, she had to leave Proserpina alone. The little girl did not mind, for she spent the day in the woods gathering the flowers she loved so well.

Have the class reproduce orally the story of Ceres.

Watch the reproductions. Get full sentences and correct verbal forms.

Write special words on the board.

Retell the story of Aesop with care as to form.

Review the use of capitals. Teach use of *I* and *O*.

Fourth Week. Complete story of Proserpina.

One day Ceres dreaded to leave Proserpina while she went away on her journey, but it was necessary, so she kissed the little girl and told her not to go far from home. Proserpina threw a kiss to her mother as the chariot moved away, then waved her hand and ran down to the seashore to play with the water nymphs. They were very slender, graceful girls with sea-green hair and blue-green eyes, but they could not leave the water. They liked to play with Proserpina, and they loved the pretty flowers she brought them.

Some distance from the shore, she saw a large, handsome, red flower. She thought how happy the nymphs would be if they could see it too. So she ran gaily away to pick the flower, but she could not break the stem. Taking a firm hold on it, she gave a tremendous pull. The plant came up, roots and all, but it left a big hole in the ground. Immediately out of the hole dashed a pair of coal black horses drawing a chariot in which rode Pluto, the king of the underground world. He stopped his team, caught the frightened little girl in his arms and hurried home with her.

King Pluto liked Proserpina and wished her to stay with him always and be his queen, but she was so sad and lonesome without her mother that she would eat nothing and talk to no one.

For six months she refused to eat and Pluto began to fear that she would die if he did not send her back to her mother. One day she was walking along a dark river when she came to a pomegranate tree. The fruit made her think of home, so she picked one and ate a little but it did not taste good. She threw it away but she had swallowed six seeds.

When Ceres found her daughter was gone, she drove to every corner of the earth looking for her. She asked the plants to help her find Proserpina. When she failed to find her, the Earth Mother lost all interest in everything. The trees and plants drooped and died and the animals had nothing to eat. Everyone begged her to cheer up, but she wouldn't be comforted.

Finally Jupiter, the great father of all the gods, sent Mercury with the winged sandals to find Proserpina. He found her and carried her to her mother. Then there was great rejoicing, but Ceres felt uneasy for fear Pluto would take the child from her again. Finally she asked Proserpina if she ate anything while she was gone. When she told of the pomegranate seeds Ceres wept again, for she said for each of these seeds Proserpina must spend a month with Pluto. While she is gone each year, Ceres grieves, nothing grows and winter rules the world.

Let the pupils reproduce the story orally. Let them dramatize it.

Note the proper names and difficult words; outline the story and tell it in parts.

Review rules for use of capitals, and illustrate; review *is*, *are*, *was* and *were*, with sentence examples.

OCTOBER

First Week. Describe trees seen on an excursion; make lists of common familiar trees. Let the children describe different trees and illustrate with drawings.

Reproduce the story of Ceres, noting language.

Illustrate the use of *see*, *saw*, *seen; come*, *came*, *come.*

Second Week. Give dictation exercises on trees studied. Study trees and pictures of trees and describe them. Review observations of fall flowers, golden rod, etc.

Study homonyms: *cent* and *sent; our* and *hour; to*, *too* and *two;* write sentences showing use of these homonyms.

Study and illustrate use of *go*, *went*, *gone.* Fill out sentences in blank: Mary, — to school. You — home.

Third Week. Examine a poem in the reader, such as *How the Leaves Came Down.*

"I'll tell you how the leaves came down,"
  The great tree to his children said;
"You're getting sleepy, Yellow and Brown,
  Yes, very sleepy, little Red;
  It is quite time to go to bed.".

Observe closely the use of capitals and quotation marks. Note the rhyming words.

Memorize this verse, then rewrite it from memory; compare your written form with that in the book and correct your mistakes.

Study *ride, rode, ridden,* and illustrate with sentences.

Review use of *is, was, were; come, came, come; see, saw, seen.*

Study *grate, great; eight, ate.*

Fourth Week. Discuss with children the autumn changes.

Use the history story of John Smith. Have his story retold; make a list of difficult names and words on blackboard; work out an outline of the story with good headings.

After oral reproductions and drill on words write out one of the topics. Let children first correct their own mistakes after teacher's corrections, discuss mistakes.

Illustrate use of *know, knew, known.*

Review *ride, rode, ridden; see, saw, seen.*

NOVEMBER

First Week. If the children have been studying the ocean and ocean harbors in geography as suggested in the *Plans for Teaching Geography,* tell the story of Ida Lewis who for sixty years cared for the light in Lime Rock Lighthouse, Newport, R. I.

Ida Lewis' father was made keeper of this lighthouse when she was fifteen years old. She assisted him by filling, trimming and lighting the lamp and often rowed ashore for supplies.

Soon after beginning the work, her father was paralyzed, so Ida performed all his duties until he died in 1867. Then Ida was appointed keeper in his place. She is the only woman who has ever been given this honor. Since then she has faithfully cared for the light and has saved eighteen lives of ship-wrecked men.

One afternoon in March when a winter storm raged, Ida trimmed and lighted the big lamp. As she stood in the tower, she heard the great waves dashing against the walls of the lighthouse. The air was full of spray and driving snow. She thought of the vessels at sea and wondered how they could live.

Just then she thought she heard cries for help. She listened again and was sure of it. She hastened down the long flights of stairs, and without stopping to dress warmly, she launched a boat in the heavy sea and started towards the place where the voices seemed to be. Rowing against the great waves was more than many men could do. Many times it seemed as though her frail boat must be dashed to pieces against the rocks. At last she reached the wreck.

Three men had gone out in a sail boat, which capsized. They had clung to its sides, but one had been washed away. The others were so cold and so nearly drowned they were nearly helpless. It was hard getting them into the boat without upsetting it, but Ida succeeded. Neither could they give her any help in getting home, but after a long struggle she made the landing. She afterwards cared for the men until they were quite well.

These men proved to be soldiers from Fort Adams. The story of their rescue spread quickly. Letters, gifts, money, and medals were sent to Miss Lewis in appreciation of her bravery.

In 1881, the governor of Rhode Island sent her a medal and told her that in all our wars there had been no greater acts of heroism than hers, no greater love for mankind shown than hers.

In 1907 she celebrated her fiftieth anniversary as keeper of the lighthouse. That year Mr. Carnegie gave her a pension of $30 a month so that in her old age she might have more of the comforts of life which she so well deserved.

Let the pupils reproduce orally the story of Ida Lewis.

The following day the pupils may write sentences about Ida Lewis. (Do not ask them to write the whole story.)

Make a good outline and have the story reproduced from the outline; copy the outline in the note books. Make a list of difficult words for study before writing.

Have the first part of the story written; correct and discuss mistakes in punctuation, spelling, etc. Give simple dictation sentences from this story.

Tell the story of Grace Darling in England, and compare.

Illustrate the use of the possessive, as, *Ida's* father.

Show use of *no*, *know; rode*, *road; led*, *lead.*

Second Week. Review the stories of Ida Lewis and Grace Darling. Show pictures of shipwrecks and lighthouses, and discuss them. Recall the story of Robinson Crusoe's wreck. Connect these stories with work in geography.

Give dictation sentences illustrating the use of previous homonyms and irregular verbs.

Study a picture and describe a modern passenger ship; collect pictures of ancient and modern ships for description.

Third Week. Tell the story of the first coming of the Pilgrims. Describe the *Mayflower* and the wild coast. Read the poem, *Landing of the Pilgrims.* (See Vol. V, page 221.) Copy the first verse from memory, noting capitals and word forms.

Let children read and tell other early colonial stories from Pratt's *Stories of Colonial Children*, etc.

Write a description of the *Mayflower*. After correction of mistakes, rewrite.

Fourth Week. Describe the first winter at Plymouth, and reproduce in simple language.

Review the story of John Smith in Virginia, and compare.

Discuss the first Thanksgiving and our modern ways of celebrating Thanksgiving. (See Thanksgiving Program, Vol. V.)

Discuss with blackboard illustration the form of a letter; write a letter of invitation to a Thanksgiving dinner.

Review rules for use of capitals. Review homonyms.

DECEMBER

First Week. Read and study the following passage:

Robert Bruce was a brave, strong man. There was no one in Scotland who was thought to be a match for him except Sir William Wallace. Now that Wallace was dead, Bruce was held to be the best man in Scotland. He was wise and prudent, and an excellent general. He knew how to conduct an army and place it in order of battle as well or better than any great man of his time. He was generous, too, and courteous by nature.

Memorize this passage. Note the use of capitals and spelling of names. Write it out from memory, with care for spelling and punctuation.

Study the use of *two, too, to; there, their.*

Second Week. Study a stanza of poetry from the reader; observe spelling and marks of punctuation.

Write it from memory, and compare your written work with the book, to discover mistakes.

Write the names of the days of the week with their abbreviations.

Study the proper use in sentences of *son, sun; whole, hole; eye, I.*

Third Week. Study the poem, *The Song of the North Wind:*

I am here from the North, the frozen North,—
'Tis a thousand leagues away,—
And I left, as I came from my cavern forth,
The streaming lights at play.

From the deep sea's verge to the zenith high
At one vast leap they flew,
And kindled a blaze in the midnight sky
O'er the glittering icebergs blue.

The frolicsome waves they shouted to me,
As I hurriedly over them passed,
"Where are the chains that can fetter the sea?"
But I bound the boasters fast.

In their pride of strength the pine-trees tall
Of my coming took no heed;
But I bowed the proudest of them all
As if it had been a reed.

I found the tops of the mountains bare,
And I gave them a crown of snow,
And roused the hungry wolf from his lair,
To hunt the Eskimo.

Study the use of the apostrophe in contractions and possessions; also the irregular verbs, as *came, took, gave, lay.* Observe the use of quotation marks.

Study the names of the months of the year, with their abbreviations, as, *January, Jan.*, etc.

Fourth Week. Copy the first three verses of *The North Wind.*

Discuss and describe a winter storm.

Recall some verses of *The First Snowfall* (Vol. I, page 452.)

Study the singular and plural forms, as *man, men; woman, women; tooth, teeth; foot, feet; leaf, leaves; wife, wives.*

Dictate sentences with days of the week and months of the year.

JANUARY

First Week. Reproduce the story of Cinderella as a series of exercises in oral English. Hold to a full construction of sentences and a continuous narrative.

Outline the story and write out in full a short section of it for careful correction and discussion.

Second Week. Use the Type Study on Lake Michigan (page 350) as a basis for language reproduction.

Study the art of paragraphing, with proper indentation.

Write a composition describing a voyage in a lake steamer. After correction, copy in the composition book.

SNOW LAND

Third Week. As I looked around, I could see snow, deep snow, everywhere. The fences, the stone walls of the scattered farms, and the huge boulders, with which that part of the country is covered, were buried out of sight. Only the tops of the birches and of the fir and pine trees could be seen. I had never met such snow before! I had never encountered such a continuous snow storm! "Surely," I said to myself again, "this is 'Snow Land.'" I wondered how long it would take to cross it. The snow was nearly four feet deep on a level.

Two hours afterward I saw in the distance a little hamlet, or a number of farms close together. What a sight! Many of the small houses were buried in the snow, and only their roofs or chimneys could be seen. From some of the chimneys smoke was curling upward. I was delighted. Every one was busy digging and making trenches, so that the light and air might reach the windows, or that communication could be had between the buildings, especially those where the animals were housed. In some cases the exit had first to be made through the chimney. It was a strange sight, indeed! and I said to myself, "Surely I am in 'Snow Land.'"

Read the above account to the children and have them reproduce it orally. Observe necessary marks of punctuation.

Fourth Week. Study the use of *see, saw, seen.*

The part of Northern Sweden referred to in the preceding week is known as the land of the long night. Write an account of how people would spend this long night.

Dictate sentences from the above passage for children to write, e.g., "Surely," I said to myself, "this is 'Snow Land.' "

FEBRUARY

First Week. Reproduce the story of Marquette for oral language. (See page 204.)

Observe in this story the writing of proper names; also the writing of dates, as *May 17, 1673.*

Review the names and abbreviations of the months.

Dictate sentences from the Marquette story requiring the use of quotation marks and capitals. Learn the meaning of *A.M.* and *P.M.*, *Capt. and P.O.*

Second Week. Study the use of the irregular verbs, as, *do, did, done; see, saw, seen; take, took, taken; run, ran, run.*

Continue the narrative and repetition of the story of Marquette. Correct common faults in the use of English, as, *is* for *are*, *come* for *came*, etc.

Write an account of the close of Marquette's life.

Third Week. Tell and reproduce stories of the early life of Lincoln.

Tell how Lincoln learned to write compositions; write about Lincoln's home in a log cabin.

Consult the American history stories.

Use the singular and plurals of these words in sentences: *wolf, wolves; ox, oxen; shelf, shelves; mouse, mice; knife, knives.*

Fourth Week. Tell of the boyhood of Washington and his adventures as a surveyor (Vol. V, p. 236.)

Compare the early life of Washington with that of Lincoln.

Write abbreviations for Virginia, Kentucky, Illinois and Indiana.

Correct common errors in the use of *throw* (throwed), *lay* (laid), *I* (me), *he* (him).

MARCH

First Week. Read and enjoy the *Pied Piper of Hamelin.* Explain the curious words and rhymes, then let the children tell the story in their own rendering.

Have a lesson on the use of pronouns *I* and *me*, *we* and *us*, *they* and *them*, *he* and *him*, *she* and *her.*

Second Week. Dictate a verse from the *Pied Piper* and correct and discuss mistakes.

Study capitals, punctuation and contractions.

Write a part of the story of the *Pied Piper.*

Illustrate the proper use of *who*, *whom* and *whose*. Review and illustrate the use of the pronouns *I*, *me*, etc.

Third Week. Dictate quotations from the *Pied Piper* and correct mistakes.

Write verses from this poem from memory, and revise by comparison with the book.

Review *do*, *did*, *done*, and other irregular verbs.

Fourth Week. Use the blackboard to illustrate the proper form of a business letter. Write a letter ordering garden seeds from a seed house; make a list of flower seeds for planting in spring time; visit a seed store. Write an account of your plan for a spring garden.

Note the proper use of *piece*, *peace; lesson*, *lessen; sea*, *see; meat*, *meet; write*, *right; blue*, *blew*.

APRIL

First Week. Introduce the story of Sparta, and let the children reproduce it as it is told in sections.

Watch for mistakes in oral speech, and write correct words and phrases on the board; use the blackboard to sketch the map of Greece and Troy and locate places named.

Observe the use of capitals in proper names. Dictate sentences from this story for written work.

Second Week. Continue the story of Troy and Helen, and reproduce the earlier parts of the story.

Notice the proper use of irregular verbs, as *was*, *were*, *won*, *gave*, *stole*, *take*, etc. Observe the correct use of pronouns.

Before asking the children to write, note difficult names and words and list them on the board. Write a section of the story with care.

Third Week. Narrate the story of the Wooden Horse; have oral and written work on this part of the tale. Tell other stories of Ulysses and Hector and Achilles for reproduction by the children.

Review the use of abbreviations and contractions; give review lesson on proper use of the personal pronouns.

Fourth Week. Reproduce the whole story of Troy, with special care as to correct sentence forms. Require complete connected statements.

Show on the blackboard what is meant by full, complete sentences.

Give a dictation exercise on the use of homonyms.

Review irregular verbs by filling blanks in sentences where verb forms are needed. Review contractions, as *can't*, *won't*, etc.

MAY

First Week. Use a nature study excursion for the observation of flowers, trees and birds as a basis for discussion. Tell a story of a robin and its nest.

Read a stanza of Riley's *When the Frost is on the Punkin* (Vol. V, p.389). Memorize a part and use it as dictation.

Give a lesson on the formation of plurals of nouns, as *horse*, *horses; table*, *tables*, etc.

Second Week. Make a study of the Baltimore oriole (see Vol. II, p. 128). Give a description of it, its nest and habits.

Write a letter to a friend describing a trip for bird study. Note correct letter form.

Review the forms and uses of pronouns with application to sentences.

Dictate a lesson on homonyms, making use of those already studied.

Third Week. Tell the children about Whittier and his early home life. Quote a passage from *The Barefoot Boy*, describing his surroundings and habits (see Vol. IV, p. 119). Write out a part of this story for correction.

Show how plurals are formed of words in *f*, as *leaf*, *leaves*, and in *y*, as in *fly*.

Fourth Week. Review lessons on irregular verbs and on use of pronouns.

Retell the story of Marquette. (See p. 204.)

Call for full sentences and correct word forms.

Give dictations to test use of capitals, plurals and homonyms.

JUNE

Review the stories of Lincoln and Washington (see *Index*), with additional anecdotes, with a view to getting full and correct narration. Look to complete sentence construction.

Read a select paragraph from the reader in prose. Get it well understood and memorize it. Then reproduce orally in writing from memory, with corrections. Proper usage is the important thing.

Review contractions, abbreviations, irregular verbs, pronouns and homonyms.

FIFTH YEAR

The teacher of the fifth grade needs to review carefully the important phases of the preceding year's work before beginning the new work. She should give a good deal of oral work in order to correct wrong habits of speech, teach the pupils to think clearly and logically and to talk in full sentences. Until a child can talk correctly, he cannot write well. Besides the oral work each month, at least one poem should be studied and memorized, either in part or as a whole, and one story should be prepared and written. Study carefully Chapter IV, *Language and Composition*, and follow the plans and suggestions there given.

SEPTEMBER

Let the pupils tell stories of their vacation. Ask them to reproduce, orally, some of their reading lessons. Have occasional dictation exercises to review the proper punctuation and capitalization of sentences and addresses. Review abbreviations, contractions, and the possessive singular of nouns.

If the pupils have read or were told the story of Columbus in connection with their geography work, let them reproduce it in their language recitation. When the pupils have the principal facts well in mind, make out an outline of the story with their help. It may be something like this:

Columbus:
  His home.
  His parents.
  The pleasures of his childhood.
  His occupation when he became a man.
  His great idea.
  His difficulties in getting aid.
  His departure and voyage.
  The result. (See Type Study *Columbus*, Vol V., p. 196.)

OCTOBER

Review the forms of some of the irregular verbs taught in the fourth grade: as *be*, *do*, *go*, *see* and *lie*. Review also the singular and plural forms and the usual ways of forming the plurals. Review the nouns whose plurals are formed irregularly. (See Vol. III, page 278.) Review the uses of periods and commas.

Talk with the pupils about the season. Call their attention to the clear blue sky, the frosty air of the mornings and evenings, to the color of the trees, and the insects still to be seen. Then let the class read the poem, *October's Bright Blue Weather.*

O suns and skies and clouds of June
  And flowers of June together,
Ye cannot rival for one hour
  October's bright blue weather.

When loud the bumble-bee makes haste,
  Belated thriftless vagrant,
And golden-rod is dying fast,
  And lanes with grapes are fragrant;

When gentians roll their fringes tight
  To save them from the morning,
And chestnuts fall from satin burrs,
  Without a sound of warning;

When on the ground red apples lie,
  In piles like jewels shining,
And redder still, on old stone walls,
  Are leaves of woodbine twining.

When all the lovely wayside things
  Their white-winged seeds are sowing,
And in the fields, still green and fair,
  Late aftermaths are growing.

After studying a stanza, dictate it for writing; study the meaning of unusual words, as *vagrant*, *aftermaths*, *freighting*.

Discuss the autumn coloring of the trees. Observe and collect autumn seeds for class discussion.

Tell the story of Millet's life. Make a picture study of the *Angelus* (see Vol. III, p. 8; IV, p. 274), as the basis for later written composition. Compare this with other pictures by Millet.

Review previous studies of irregular verbs and apply them to sentences.

NOVEMBER

Review the formation of plural possessives. Drill carefully on forming the possessive of plurals ending in *s* and those ending in other letters.

Review simple quotations. Teach the pupils to write divided quotations: as, "I think," *said Alice*, "this is the best story I ever read."

Review the principal parts of the following verbs: *lay*, *sit*, *say*, *ring*, *sing*.

Distinguish between the following forms: *whose*, *who's*, *its*, *it's*, *their*, *they're*. Give frequent dictation exercises to fix these forms in mind.

After a discussion of the following words with the class, let them write sentences using each one correctly: *sea*, *see*, *sew*, *sow*, *steak*, *stake*, *sum*, *some*, *steel*, *steal*.

Let them write other words meaning the same as the following: *aged*, *sly*, *excuse*, *collect*, *delay*, *hurry*, *vex*, *labor*, *attempt*, *inform*. (See page 191, Section 20.)

Make a study of paragraphs, both of prose and poetry. (See page 113, paragraph b *Form*.) To begin with, choose a prose selection in the pupils' readers in which the topic of each paragraph is easily seen. Ask the pupils to read silently the first paragraph, and find the topic which it discusses. At first, there may be a difference of opinion in regard to what the topic is or there may be a difference in the way the pupils express it. Show them that their ideas are similar. Study the whole selection. Have the pupils make a list of the topics of all the paragraphs, and note the order in which they occur.

Study two or three selections in this way, using one poem.

Before asking the pupils to write another story, help them to make an outline to use which will assist them in dividing the story into paragraphs.

Ask the pupils to reproduce orally some of their favorite reading lessons. After the story of John Eliot has been given in geography, let the pupils reproduce it, orally, for a language lesson.

While discussing the Pilgrims, a special study may be made of Pilgrim children: the way they were dressed, their cradles, playthings, training at home, their schools and the tasks often given them.

Later, with the children's help make a little outline for them to follow in telling the story. When the story has been well told, let the pupils play they are Pilgrim children and let each tell a story of his life. Each may make his story as original as possible. These stories may be copied into the children's composition books after the teacher has corrected the errors.

DECEMBER

Teach the principal parts of *blow*, *know*, *bring*, *buy*, *catch*, *teach*, *sink*, *fly*, *throw* and *draw*. Drill carefully on these.

Give frequent dictation exercises to test the pupils' ability to use commas, quotation marks, the possessive and capitals correctly.

Let the pupils reproduce orally in the language recitation some of their reading lessons, the history stories given in connection with the geography work and short stories read at home. (See page 117, last paragraph.) If the story of Pocahontas has been well told, let the pupils write it, and illustrate it with drawings of her home. This may be copied into the pupils' composition books, after the teacher has corrected it. By exercises of this sort the note books may be made very attractive.

Towards Christmas time talk with the pupils about the things we can do at this season to make others very happy. Let them think of people they know who are poor or in trouble of some kind and of something that would make them happy. There may be old people who have no one to provide for them, children who lack the necessities of life, crippled children or other unfortunates in the neighborhood. Ask the pupils to play they are Santa Claus looking in at some of these homes. Describe what he would see and what he would be apt to do for them. Let each child try to be a *good* Santa Claus. Let the class write these stories and when the teacher has corrected them, copy them into their composition books.

Tell in sections the story of *Lewis the Soft*, given later in this chapter. Make a good outline of the story, as a basis for oral and written reproduction. Watch the oral reproduction for mistakes in English. Illustrate correct forms on blackboard. Dramatize two or three scenes in this story.

For oral work, recall one or more of the Christmas stories.

JANUARY

Review the principal parts of the irregular verbs previously taught. Teach the parts of *bring, buy, fight, think, teach, catch, break, freeze, speak, write.* Drill carefully on the use of the past tense and past participle of each verb.

Teach the pupils to distinguish between *teach* and *learn, can* and *may, shall* and *will.*

Continue work on finding the subject and predicate of sentences.

Give frequent dictation exercises to fix in mind the proper use of commas, periods, quotation marks, the correct spelling of contractions, and possessives. (Ask the class to write a list of addresses occasionally to see if they remember the correct punctuation. See page 178, Section 10, and page 182, Section 12.)

Tell the children the story of the Gold Seekers on the trip to California in '49, found in the history stories. Outline the story and reproduce it orally. Give parts of it for writing, copying the corrected exercises in the composition book.

Introduce the story of Abou Ben Adhem. (See Vol. IV, p. 280.) Read the poem and discuss its meaning. Get good oral statement of the story.

FEBRUARY

Give dictation exercise to test the pupils' ability to write divided quotations properly, to spell contractions and write possessives correctly and to punctuate properly. Give sentences to test their ability to distinguish between such forms as *its, it's; whose, who's; their, they're.*

Review the principal parts of the irregular verbs already taught. Teach the parts of *give, take, shake, drive, ride, eat, fall, sink.*

Review the uses of *can, may; shall, will; teach* and *learn.*

Let the class recall the forms of the irregular verbs learned that are always used with a helping verb. Memorize the helping verbs so that the pupils will always recognize them.

If they have read a very interesting story, such as *Aladdin, Stories of Robin Hood, King of the Golden River,* or *Robinson Crusoe,* let them reproduce parts of these for language work. If the story of Daniel Boone was told in connection with the geography work, it may be reproduced orally in the language recitation. (See page 196, Section 21.) Tell the story of the *Merchant of Venice.*

The story may be told to the class. The part told one day may be reproduced orally the next day and when it has been well told, the teacher may tell another part of the story. After it has all been given, the pupils may write it and when corrected, copy it in their composition books.

Tell the following story of *Bruce and the Spider*. Bruce was in hiding from his enemies, and had been deserted by many of his friends:

"Doubtful of what he should do, Bruce was looking upward to the roof of the cabin in which he lay. His eye was attracted by a spider, which, hanging at the end of a long thread of its own spinning, was trying to swing itself from one beam in the roof to another. The insect made the attempt again and again without success. At length Bruce counted that it had tried to carry its point six times. It came into his head that he himself had fought just six battles against the English and their allies, and that the poor, persevering spider was exactly in the same situation with himself. 'Now,' thought Bruce, 'as I have no means of knowing what is best to be done, I will be guided by the luck which shall attend this spider. If the insect shall make another effort to fix its thread, and shall be successful, I will venture a seventh time to try my fortunes in Scotland. But if the spider shall fail I will go to the wars in Palestine, and never return to my native country more.'

"The spider tried again with all the force it could muster and fairly succeeded in fastening its thread to the beam which it had so often, in vain, attempted to reach. Bruce, seeing the success of the spider, resolved to try his own fortune. As he had never before gained a victory, so he never afterwards met any decisive check or defeat."

Get full reproduction with appropriate complete sentence forms. Tell of Bruce's conflict with England, and show the geography of the story.

Let children state and write out the conclusion of Bruce's lesson learned from the spider.

What other men have you read of who showed strong will power and courage in defeat?

Use the dictionary in studying the meaning of unusual words.

Refer the children to Scott's *Tales of a Grandfather*.

Write a letter describing a journey during your vacation. Discuss the plan of such a letter and suggest points of interest.

Apply the ideas of full sentence construction, with proper arrangement of phrases, clauses, etc. Copy the corrected letter in the composition book. Study Lincoln's letter to Mrs. Bixby (Vol. V, p. 452).

MARCH

The Geography Plans for this month contain lessons that would be excellent for oral and written language lessons. The pupils may be asked to describe a geyser, one of the large redwood trees in California, Mt. Shasta, a trip to Alaska or the Columbia River and the salmon fisheries. The teacher may assist the class to make an outline of the lesson, and after it has been given well orally, let them write it.

If the class have a bird reader, let them describe the different birds' nests they have seen. Choose a topic with which the class are familiar so that they can use originality in writing the story. (See *Bird Studies*, Vol. II, page 128.)

Teach the two following poems:

The Day Well Spent

If you sit down at set of sun
And count the deeds that you have done,
And, counting, find
One self-denying act, one word that eased the heart of him that heard;
One glance most kind, which felt like sunshine where it went,
Then you may count that day well spent.

But if through all the live-long day
You've eased no heart by yea and nay,
If through it all you've nothing done that you can trace
That brought the sunshine to one face,
No act most small that helped some soul and nothing cost,
Then count that day as worse than lost.

Also *A Farewell* by Charles Kingsley. (See Vol. I, page 197.)

APRIL

Tell the story of Whitney's invention of the cotton gin, and the results he achieved. This would lead to a study of Southern cotton fields and cotton growing in the South.

Describe the cultivation and picking of cotton. (Consult the geography and supplementary readers.)

Write the story of Whitney. After correction, copy it.

Study and apply the correct forms of pronouns and of irregular verbs.

Tell the story of Watt and the steam engine, and the value of this invention. Tell of the different ways in which steam engines are used and their importance. Make a list of other important inventions and the men who discovered them.

Make a review of the abbreviations for the days of the week and the months of the year.

Tell the story of William Penn and the settlement at Philadelphia.

MAY

Let the class reproduce some of their reading lessons orally, tell stories they have read at home, and those read in connection with the geography work.

Tell them the story of *The Constitution*, the most famous vessel in the history of the U. S. Navy.

The Constitution was one of the first battleships built in the United States. It was built at Hart's shipyard in Boston, and was launched Oct. 21, 1797. It was coppered by Paul Revere and went to sea in Aug., 1798. It carried 44 guns.

England had long been considered "mistress of the seas." She had many fine battleships. So when war was declared between her and the United States in 1812, the Americans had little hope of winning any battles at sea.

However, *The Constitution* was called into service, and very soon it met a British man-of-war in the Gulf of St. Lawrence. In a half hour's time the American vessel had shot the British ship so full of holes that it sank. The British lost one hundred men and the Americans had fourteen killed and wounded. The American crew said that the British cannon balls rolled off the sides of *The Constitution* as though her hull were made of iron. Hence, they called her "Old Ironsides," and it is thus she is remembered by all Americans.

Later, *The Constitution* met another British ship, near the coast of Brazil. After two hours' fighting, the British vessel was a total wreck and 230 men were dead.

In six months England lost six vessels and had taken none. This gave the Americans courage. The war lasted two years and resulted in victory for the United States.

In 1833, *The Constitution* was declared unseaworthy and Congress voted to destroy her. Upon learning this, Oliver Wendell Holmes wrote his famous poem "Old Ironsides." It so stirred the feelings of the American people that they begged Congress to save the old ship. Consequently, it was rebuilt and put to sea. For more than forty years it continued to be of service, but in 1878, it went out of commission and was stored in the Navy Yard at Charleston, Mass., where it may be seen today.

Teach *Old Ironsides:*

Ay, tear her tattered ensign down!
    Long has it waved on high,
And many an eye has danced to see
    That banner in the sky;
Beneath it rung the battle shout,
    And burst the cannon's roar;
The meteor of the ocean air
    Shall sweep the clouds no more.
Her deck, once red with heroes' blood,
    Where knelt the vanquished foe,
When winds were hurrying o'er the flood,
    And waves were white below,

No more shall feel the victor's tread,
Or know the conquered knee,—
The harpies of the shore shall pluck
The eagle of the sea.
Oh, better that her shattered hulk
Should sink beneath the wave;
Her thunders shook the mighty deep,
And there should be her grave;
Nail to the mast her holy flag,
Set every threadbare sail,
And give her to the god of storms,
The lightning, and the gale!

JUNE

Tell the story of Florence Nightingale and of the Red Cross Society. Explain the helpful work of this great organization in times of misfortune and calamity.

Tell the story of *The Pilgrim and the Rich Knight:*

In a noble castle there once lived a very rich knight. He expended much money in adorning and beautifying his dwelling; but he gave little to the poor.

A weary pilgrim came to the castle, and asked for a night's lodging. The knight haughtily refused him, and said, "This castle is not an inn."

The pilgrim replied, "Permit me to ask you three questions, and I will depart. "Upon this condition, speak," said the knight. "I will readily answer you."

The pilgrim then said to him, "Who dwelt in this castle before you?" "My father," replied the knight.

The pilgrim asked again, "Who dwelt here before your father?" "My grandfather," answered the knight.

"And who will dwell here after you?" still asked the pilgrim. The knight said, "With God's will, my son."

"Well," said the pilgrim, "if each dwells but his time in the castle, and in turn must depart and make way for another, what are you otherwise here than guests?"

"This castle, then, is truly an inn. Why therefore, expend so much money in adorning a dwelling which you will occupy but a short season? Do good; be charitable; for 'He that hath pity upon the poor, lendeth unto the Lord; and that which he hath given, will he pay him again.'"

The knight took these words to heart; he gave the pilgrim shelter for the night, and was henceforth more charitable toward the poor.

Dramatize this story.

In writing it out, notice the punctuation needed in dramatic narrative.

Write an original composition on some familiar topic, as making a garden in spring, a trip to the river or to the seashore, camping out, an adventure with a pony, etc.

Give an exercise in dictionary work in the dealing with different meanings of the same word.

SIXTH YEAR

History, geography and reading lessons should furnish excellent topics for both oral and written language lessons. After discussing the life and work of a pioneer, assist the pupils in making an outline of the lesson. They may use this in writing the story, or each pupil may choose the incident which interested him most and write it.

After studying a foreign country, the children may be asked to discuss the topic that seemed to them the most interesting. After a study of Switzerland, some pupils might consider the Alps the most interesting subject; others, the Simplon tunnel, while others might be interested in the chamois or the mountain boys who do such fine wood carving.

Some reading lessons enable a class to make a study of character, as *The King of the Golden River*. (See page 80.) After questioning the pupils to lead them to think of what the story reveals of a character, let them tell what they think of him. When they have learned to think out subjects of this kind and to express their thoughts well, let them write a short sketch of some character. (See pages 215 and 216.)

Letter writing should be continued in this grade. Longer letters may be expected this year than previously, but the teacher must always prepare the pupils for such an exercise in order that they may have *something to say* and be so anxious to say it that their thoughts will be spontaneous and their expressions natural. Business letters should be given attention. (See pages 225-228.)

Each month at least one poem or prose selection should be studied and memorized and one story or description written, corrected and copied into composition books.

SEPTEMBER

Review the rules for the use of capitals, periods, and commas. Give dictation exercises to test the pupils' ability to apply these rules.

Occasionally let the pupils explain the use of the capitals and periods on a page of their readers.

Review the kinds of sentences and the parts of a sentence; subject and predicate. Teach compound subjects and compound predicates. Write a list of simple sentences on the board, frequently, and ask the pupils to draw short, vertical lines between the subjects and predicates. Let some of the sentences be questions and some lines of poetry in which the inverted order is used.

Teach the meaning of a *simple* sentence. (See page 176.)

Have some oral language work almost every day. Endeavor to give so much drill upon such expressions as, *It is I*, *It is he*, *she or they*, that the pupils will finally use them automatically. Listen for the incorrect expressions common among the children, and by drills, lead the pupils to use correct terms. (See page 195.)

Develop at least one story of medium length, and have the pupils write it. Correct it, and let them copy it in their composition books.

Teach *The Builders*, by Longfellow. (See Special Day Programs, Vol. III, page 425.) Let the pupils first read the poem. After each paragraph has been read, question the pupils to help them see the thought it contains. Let them memorize the first three, the sixth, the eighth and the ninth stanzas.

OCTOBER

Besides the oral reproductions of reading lessons, history stories and stories read at home, let the pupils describe things in nature which interest them. (See page 216.)

Let them describe objects or places of note in the countries studied in their geography lessons, as the Alps, Mt. Blanc etc. Develop at least one written lesson which may be copied in the composition books.

Let the class write a business letter inquiring the price of some article: seed, a machine, a book, or anything one of the people in the neighborhood might want.

Review the list of irregular plurals and the rules for forming other plurals.

Teach *Yussouf*. Explain to the class that this is an Arab legend. In the Far East people observe strictly the old rules and customs of the race. One of these requires that an Arab must hold himself responsible for the safety of his guest under all circumstances. This story proved how faithful they can be to a trust.

YUSSOUF

A stranger came one night to Yussouf's tent,
  Saying, "Behold one outcast and in dread,
Against whose life the bow of power is bent,—
  Who flies, and hath not where to lay his head;
I come to thee for shelter and for food,
To Yussouf, called through all our tribes, 'The Good.' "

"This tent is mine," said Yussouf, "but no more
  Than it is God's; come in, and be at peace;
Freely shalt thou partake of all my store,
  As I of His, who buildeth over these
Our tents, His glorious roof of night and day,
And at whose door none ever yet heard Nay."

So Yussouf entertained his guest that night,
And waking him ere day, said: "Here is gold;
My swiftest horse is saddled for thy flight;
Depart before the prying day grow bold."
As one lamp lights another, nor grows less,
So nobleness enkindleth nobleness.

That inward light the stranger's face made grand,
Which shines from all self-conquest. Kneeling low,
He bowed his forehead upon Yussouf's hand,
Sobbing: "O sheik, I cannot leave thee so;
I will repay thee; all this thou hast done
Unto that Ibrahim who slew thy son!"

"Take thrice the gold," said Yussouf, "for with thee
Into the desert, never to return,
My one black thought shall ride away from me.
First-born, for whom by day and night I yearn,
Balanced and just are all of God's decrees;
Thou art avenged, my first-born; sleep in peace!"
—James Russell Lowell.

Study this selection to get its basal idea, and write out a statement of its meaning.

Observe in detail the variety of punctuation marks. Make a list of the homonyms found in this poem. Give the parts of the irregular verbs used. Dictate one or more of the verses to be written. Compare this poem with *Abou Ben Adhem.*

NOVEMBER

Continue the work in oral language, which is suggested in the September and October plans. In addition, begin the discussion of the principal characters in the stories read. (See page 78.) If practicable, suggest that the pupils read Franklin's *Autobiography.*

"From my infancy I was passionately fond of reading, and all the money that came into my hands was laid out in the purchasing of books. My first acquisition was Bunyan's work in separate little volumes; I afterwards sold them to enable me to buy R. Burton's *Historical Collections.* My father's little library consisted chiefly of books in polemic divinity, most of which I read. There was among them *Plutarch's Lives*, which I read abundantly, and I still think that time spent to great advantage. There was also a book of Defoe's called *An Essay on Projects*, and another of Dr. Mather's called *An Essay to do Good*, which perhaps gave me a turn of thinking that had an influence on some of the principal future events of my life.

"This bookish inclination determined my father to make me a printer, though he already had one son, James, of that profession. I liked it much better than that of my father, but still had a hankering for the sea. To prevent this my father was impatient to have me bound to my brother. I stood out some time, but at last was persuaded and signed the indenture when I was but twelve years old. I was to serve an apprenticeship till I was twenty-one years of age, only I was to have journeyman's wages during the last year. In a little time I made great progress in the business and became a useful hand to my brother. I had now access to better books. An acquaintance with the apprentices of booksellers enabled me sometimes to borrow a small one which I was careful to return soon and clean. Often I sat up the greater part of the night, when the book was borrowed in the evening, and to be returned in the morning, lest it should be found missing."

Read this passage to the children and have it reproduced. It opens up several lines of profitable discussion, as what books to read,—what trade or calling to choose,—how to spend one's time and money. Let children write a short composition for correction on one of these topics.

Refer the children to Franklin's *Autobiography* and to the Type Study, *Franklin*. (See Vol. V, p. 141; III, p. 63.)

DECEMBER

Continue oral work. This month let the evergreen trees, the holly, mistletoe, Christmas customs of other lands (see Special Day Programs, Vol. V, p. 402) and Christmas stories be the subjects for both oral and written work.

Let the pupils learn the common definitive adjectives: *a*, *an*, *the; each*, *every; either*, *neither; this*, *that; these*, *those; some*, *other*, *any*, *all*, *such*, *both*, *same*, *another*, *no*, *many*, *few*, *one*, *two*, (etc.), *first*, *second*, (etc.).

Tell the pupils of Francis Marion, a native of South Carolina, who during the latter part of the Revolutionary War did much to protect the South from British invasion. He had a small force of cavalry who were ill-equipped and ill fed, who struggled against great obstacles, yet they did much for the United States. They intercepted British supplies, fell upon small detachments of British soldiers and captured them, and acted as scouts. For a time they were so closely pursued by the enemy that they took refuge in a swampy forest. Because of this and because Marion was so successful in eluding his enemies, they called him "The Swamp Fox." (See Vol. V, p. 156.)

Teach the *Song of Marion's Men*.

Our band is few, but true and tried,
  Our leader frank and bold;
The British soldier trembles
  When Marion's name is told,
Our fortress is the good greenwood,
  Our tent, the cypress-tree;

We know the forest round us,
As seamen know the sea.
We know its walls of thorny vines,
Its glades of reedy grass,
Its safe and silent islands
Within the dark morass.

Woe to the English soldiery
That little dread us near!
On them shall light at midnight
A strange and sudden fear:
When waking to their tents on fire
They grasp their arms in vain,
And they who stand to face us
Are beat to earth again;
And they who fly in terror deem
A mighty host behind,
And hear the tramp of thousands
Upon the hollow wind.

Then sweet the hour that brings release
From danger and from toil:
We talk the battle over,
And share the battle's spoil.
The woodland rings with laugh and shout,
As if a hunt were up.
And woodland flowers are gathered
To crown the soldier's cap.
With merry songs we mock the wind
That in the pine-top grieves,
And slumber long and sweetly,
On beds of oaken leaves.

Well knows the fair and friendly moon
The band that Marion leads—
The glitter of their rifles,
The scampering of their steeds.
'Tis life our fiery barbs to guide
Across the moonlight plains;
'Tis life to feel the night-wind
That lifts their tossing manes.
A moment in the British camp—
A moment—and away
Back to the pathless forest,
Before the peep of day.

Grave men there are by broad Santee,
  Grave men with hoary hairs,
Their hearts are all with Marion,
  For Marion are their prayers.
And lovely ladies greet our band,
  With kindliest welcoming,
With smiles like those of summer,
  And tears like those of spring.
For them we wear those trusty arms,
  And lay them down no more
Till we have driven the Briton
  Forever from our shore.
—William Cullen Bryant.

Read what you can find in the histories about Marion. Compare Marion with other bold American leaders, as Anthony Wayne, Putnam, Paul Jones. Write an account of one of these Revolutionary heroes.

The school library or public library should be used in such readings.

JANUARY

Study the forms of business letters in the language book.

Write a letter ordering a list of supplies from a hardware store, for use at home.

Narrate the story of Alexander and Bucephalus. Find other anecdotes and events of Alexander's life in the supplementary books, and report these stories in the class. These topics will call for a study of the geography of Greece, Asia Minor, Egypt, etc.

Use the dictionary in finding and interpreting new words. Learn how to use the cyclopedia also, in hunting up references and in reporting on topics.

Review the rules for forming of plurals of words ending in *y*, *f*, *ch*, etc.

FEBRUARY

The language work this month may consist chiefly of the biographies of Lincoln, Washington and Longfellow. (See Vol. V, page 140.) Anecdotes relating to them may be told and written. (See Lincoln and Washington Birthday Programs, Vols. III and V.)

Memorize a passage from Lincoln's Gettysburg Address (Vol. V, 449). Write this out from memory with care as to written form, spelling, paragraphing and markings. Read about the life of longfellow and prepare a paper giving a brief account of the main events of his life, his chief works, etc. Read and discuss these papers in class.

MARCH

Make a study of the lives of Burroughs, Audubon and Agassiz, who were lovers of outdoor life and of nature.

Read Whittier's *Barefoot Boy*, to see how he regarded nature.

What opportunities are offered in your own neighborhood to study trees, flowers, birds, insects and weather changes? Keep an account of weather conditions and changes during March and tell their effects; report the same.

Write the story of Audubon and read it in class.

APRIL

Study the changes taking place in the trees during April, and make a record of these observations. Keep a bird calendar of bird migrations for the month. Write a paper on the results.

Read and report on passages from Burroughs' *Squirrels and Other Fur-bearers*. Report on series of animal life and of adventures in hunting.

Study the list of irregular verbs, and pick out those which give trouble, as *lie*, *lay*, *teach*, *go*.

Make a list of abbreviations in common use, as *P.O.*, *P.M.*, *Feb.*, *Prof.*, *Dr.*, *Mr.*

MAY

A BOOK

I'm a strange contradiction; I'm new and I'm old;
I'm often in tatters, and oft deck'd in gold;
Though I never could read, yet letter'd I'm found;
Though blind, I enlighten; though loose, I am bound.
I am always in black, and I'm always in white;
I am grave and I'm gay, I am heavy and light.
In form, too, I differ—I'm thick and I'm thin,
I've no flesh, and no bones, yet I'm covered with skin;
I've more points than the compass, more stops than the flute;
I sing without voice, without speaking confute;
I'm English, I'm German, I'm French and I'm Dutch;
Some love me fondly; some slight me too much;
I often die soon, though I sometimes live ages,
And no monarch alive has so many pages.

—Hannah Moore.

How are books printed and bound? Make an excursion to a printing house; observe printing and binding. Write an account of this excursion.

Read about the invention of printing; of Gutenberg, and of later improvements in printing. Read of Franklin's apprenticeship as a printer, and his later work as a printer in Philadelphia. Quote passages from Franklin's *Poor Richard's Almanac.*

Make a study of contractions in common use.

JUNE

Read and report on the story of Ulysses.

There is an extensive library of children's books connected with the *Odyssey*—the story of Ulysses.

Read and report on such adventures of Ulysses as the Cyclops, the Phaeacians, the return home, and the battle with the suitors.

Write an account of Homer and his work.

Consult: Butcher and Lang, *Odyssey of Homer.*

Palmer's *Odyssey.*

Lamb's *Adventures of Ulysses.*

Gale's *The Children's Odyssey.*

SEVENTH YEAR

In the seventh and eighth grades there should be a systematic study of technical grammar, but the oral and written language work should be carried along with the technical work in order that the pupils may learn to apply the rules of grammar in their every-day conversation. The language work should include original descriptions and narrations, reproductions of stories read and descriptions of characters in these stories. As a result of the language work, pupils should learn to interpret correctly what they read and to express their thoughts in correct English.

SEPTEMBER

Study the parts of speech. After reviewing any part of speech, as nouns, let the pupils name all of those found on a certain page in their readers. When all parts of speech have been reviewed, let the pupils tell the part of speech of each word in a paragraph.

Review phrases and clauses. Let the class find examples of each in the readers.

Besides the technical work, there should be oral description of interesting events and reproductions of interesting parts of reading lessons.

Study and report on the life of Washington. (Consult Scudder's *Life of Washington.*)

OCTOBER

This month the pupils should make a thorough study of nouns. Teach the kinds—common, proper, collective and abstract.

If the class have studied the *Great Stone Face* in their reading lessons, let them give oral descriptions of the important topics discussed in the lesson, such as the valley, the face, Gathergold, Old Blood and Thunder, Old Stony Phiz and Ernest.

The class may write a sketch of Hawthorne's life.

Let the pupils study and memorize *The Last Leaf*, by Holmes.

NOVEMBER

Continue the modifications of nouns. Teach gender and case. Teach the rules for forming possessives. Teach declensions, the parsing of nouns and noun clauses.

Review the classes of pronouns. Teach the declension of personal and relative pronouns. Drill carefully on the nominative and objective forms. Teach relative clauses. Parse pronouns.

There should be a good deal of original work in oral and written descriptions and narrations from this time on.

If the poem, *Down to Sleep*, by Helen Hunt Jackson, has been studied as a reading lesson, let the class memorize it for language work. (See page 89.)

DECEMBER

Teach the kinds of adjectives—descriptive, limiting, proper. Under descriptives, discuss participial adjectives; under limiting adjectives, discuss demonstratives and articles. Let the pupil compare adjectives, and later, parse them. Review adjective phrases and clauses.

Let the pupils memorize *While Shepherds Watched Their Flocks by Night*, by Margaret Deland. (See *Special Day Programs, Christmas*, Vol. V, page 403.)

Take up the study of the Sistine Madonna; have the class write the story.

THE SISTINE MADONNA

TYPE STUDY

The *Sistine Madonna*, one of the Twelve World Pictures, was painted by Raphael for the monks of the Chapel of San Sisto in Piacenza, a small town north of Rome, early in the sixteenth century. The Virgin Mother is represented descending from heaven, bearing the Child in her arms. At the left Pope Sixtus II kneels in adoration, and on the right Saint Barbara looks down upon the two winged cherubs that lean on a parapet below and

From a painting by Raphael

SISTINE MADONNA

look upward at the Mother and Child. Two green curtains drawn aside form a suitable setting for the scene, and the background is filled with the faces of cherubs, which lend an ineffable charm to the picture and constitute one of its rare hidden beauties. At the first glance they appear so indistinct that the faces are scarcely recognized, but as you continue to gaze upon the picture they seem to come forward out of a great depth, until you recognize the outlines of many faces. In the center of the picture and transcending all other features are the Mother and Child.

An art critic says, "We may study details, but after looking at the picture all we carry away is the divine look on the face of Mary. There is a shade in those eyes so solemn and so grand, something so penetrating and profound, that we ask ourselves where the magic of them lies, and we look in them again and again till a deep sense of mystery is left upon us, a mystery of which the source was known to Raphael, and to Raphael alone."

The colors are of special significance. The Mother is clothed in glorious blue, symbolizing heavenly love, truth and constancy. Saint Barbara is in a green mantle, expressive of hope, and Pope Sixtus wears gorgeous robes of red and gold, symbolic of his high office. A heavenly light surrounds the Mother and Child, and the green curtains looped back reveal a vision that is for all time.

The story is told that while the artist was at work upon this picture, two little children who were very shy came to watch him. He finally succeeded in making friends with them, and often shared his lunch with them. They were with him so much that when his picture was completed, he thought it seemed incomplete without these two children, so he put them into the picture as cherubs. (For biography of the artist, see Vol. II, page 420.)

The picture is nine feet, three inches high and seven feet wide. In 1753 it was purchased by the Elector of Saxony for $50,000 and it now hangs under glass in the Royal Gallery of Dresden.

Lead the pupils to discover the hidden beauties in the picture as well as its more prominent features. This may be done by asking questions that will bring out the points desired. After several discussions ask the pupils to describe it orally, then place their description in written form.

JANUARY

Begin the study of the verbs. Teach transitive and intransitive verbs thoroughly, so that the pupils will have no trouble to distinguish between them. Teach the principal parts of the most common irregular verbs; then take up the modifications of verbs—voice, mode, tense, person and number. Let the class conjugate a few verbs.

Let the class memorize some of the beautiful descriptions in *Evangeline.* If it has not been taken up in the reading lessons, choose any other selection to memorize which the class has enjoyed. *The Wreck of the Hesperus* or *Paul Revere's Ride,* by Longfellow, may be learned. (See *Special Day Program, Longfellow Day,* Vol. III, page 426.)

Study the life of Longfellow.

FEBRUARY

Teach the kinds of adverbs—adverbs of time, place, manner and degree Teach the kinds as to use—simple, conjunctive and interrogative. Compare adverbs. Review adverbial phrases and clauses.

If the stories of *Arthur and the Round Table* are studied in the reading lessons, take subjects from these for the language work. Stories of Longfellow and Lincoln may also be used. (See *Special Day Programs,* Vol. III, page 393, and following.)

Let the pupils study and memorize parts of *Sir Galahad,* by Tennyson. Read and report on the story of Roland.

MARCH

Teach the classification of phrases as to form—prepositional, infinitive, participial; as to use—adjective, adverbial and noun.

Review prepositions and conjunctions. Drill carefully on them, so that the pupils will not confuse the two parts of speech.

The pupils may study Bryan Waller Procter's poem, *The Sea,* and memorize the stanzas they like best, or they may learn *Opportunity,* by John James Ingalls. (See *Special Day Programs,* page 550.)

Made a study of letter writing.

APRIL

Teach the rules of syntax relating to nouns—the case of nouns used as subjects of sentences, as predicate nominatives, as appositives, as terms of address, as direct objects, as objects of prepositions, as indirect objects and as adverbial objectives.

Teach the rules relating to pronouns—their agreement with their antecedents in person, gender and number; the cases of pronouns when used as subjects, objects and as terms of address.

Make a study of adjectives commonly misused, as: *awful* for *very; cute* for *attractive,* etc.

Have analyses of simple and complex sentences.

Read the stories of Irving's *Alhambra,* and report upon them in class.

MAY

Teach the construction of verbs—their agreement with their subjects in person and number; the sequence of tenses. Teach the construction of infinitives and participles. Discuss the use of such verbs as *can*, *may; shall*, *will; learn*, *teach*. Teach the pupils to study a sentence to determine the part of speech of each word.

Continue the analysis of easy complex and compound sentences.

Let the pupils study F. M. Finch's poem, *The Blue and The Gray*. (See *Special Day Programs*, Volume V, page 425.) Let the class memorize a part of this poem.

JUNE

Teach the correct use of such prepositions as *at*, *to; at*, *in; in*, *into; between*, *among; by*, *with*.

Teach the proper use of correlatives. Give thorough reviews of all phases of the work in which the pupils are weak.

EIGHTH YEAR

The study of the sentence should be considered the most important feature of the work of this year. It trains the pupils in observation and reasoning, and leads them to a critical study of English as nothing else will.

In connection with this year's work the teacher should study thoroughly and consult frequently the chapter *Composition and Grammar*.

SEPTEMBER

Review the classes of sentences, parts of speech and definitions of *phrase* and *clause*, studied the previous year, but use for these lessons selections studied in the reading class, such as *The Wonderful One-Hoss Shay*, *The Chambered Nautilus* or *Silas Marner*.

Study the life and works of Oliver Wendell Holmes.

OCTOBER

Teach the classification of nouns—common, proper, collective, abstract. Drill upon the use of each class by requiring the pupils to use them in sentences of their own construction.

Teach number and the rules for the formation of plurals, with the exceptions. (See Irregular Plurals, page 192.) Teach the plurals of compound nouns.

NOVEMBER

Teach gender, case, declensions and rules for the formation of the possessive.

In connection with this work have the class analyze a few sentences every week. For material use *A Hunting of the Deer, To a Waterfowl* and selections from *The Vision of Sir Launfal.*

Read and report on the life of William Cullen Bryant.

DECEMBER

Teach pronouns; the classes—personal, interrogative, relative and adjective. Teach declension of pronouns. Introduce relative clauses.

Parse pronouns. Take your studies from *Silas Marner* and the *Christmas Carol* (Dickens).

JANUARY

Teach adjectives and their classification—descriptive, limiting, participial, proper, demonstrative and articles.

Teach the comparison of adjectives; adjective clauses.

Parse adjectives. Use selections from the *Lady of the Lake.* Read selections from *David Copperfield* to the pupils.

Study life of Scott.

FEBRUARY

Devote this month to the study of the verb. Classification—transitive, intransitive, auxiliary, regular, irregular, infinitives and participles.

Teach voice, mode and tense.

In teaching conjugation dwell upon the principal parts and the changes required in the formation of the different tenses. The mere repetition of conjugations is of little value. (See list of irregular verbs, page 194.)

Drill upon auxiliaries, that the right auxiliary may always be used.

MARCH

The adverb logically follows the verb, and should receive as careful attention. Many of the errors of speech consist in the wrong use of verbs and adverbs.

Classification—adverbs of time, place, manner and degree.

Comparison of adverbs.

Adverbial phrases. Classification as to form—prepositional, infinitive and participial. Classification as to use—adjective, adverbial, noun.

Adverbial clauses.

APRIL

Study prepositions and conjunctions. This study should include the classification of conjunctions, the distinction between prepositions and conjunctions, and their use. The study should be based upon the analysis of sentences and original written exercises.

MAY AND JUNE

The remainder of the year should be devoted to the application of the principles and rules studied, to the analysis of sentences taken chiefly from selections studied in the reading class and to the critical study of original composition by the pupils. The aim should be to fix in the minds of the pupils a knowledge of correct forms and to train them in the correct use of those forms. Use selections from *Sohrab and Rustum* and *Julius Caesar* for some of your studies.

STORY - TELLING
In Intermediate Grades

By Dr. Charles A. McMurry

The story-teller's art has been applied successfully to the primary school and has enlivened the studies and exercises of the children. The old-fashioned dullness and tedium of primary spelling and reading have been broken up and a living interest substituted for the sleepy tiresomeness of the old régime. Story-telling, combined with social activities and games, has made over the primary school in the interest and spirit of modern educational ideals.

But the fourth, fifth and sixth grades have not felt this reviving influence to the same degree. With the exception of good stories in reading books these intermediate grades have fallen into a dull routine of studies in geography and history and language which calls for a stirring reform, a complete revival of stronger interests in studies.

In these grades teachers have been holding too strictly to textbooks, and textbooks in geography and language, and often even in history, are dull and dry. There are some exceptions, but a heavy, dull quality in textbooks is the rule, and this reign of dullness has become oppressive. Children should not get their main sustenance out of dry, scrappy textbooks, but rather from a rich, interesting and vital treatment of topics orally by the teacher. Every teacher should be skillful and versatile in lively oral instruction.

One of the chief means of reviving instruction in intermediate grades is the skillful telling of good stories. There are plenty of such stories exactly suitable to these years of school life, and training in this kind of study would wake up the teacher as much as it would wake up the children. At present many lessons are directly assigned out of dull textbooks, are partially memorized and haltingly recited by the children because they do not understand what they have tried to learn. The books are not only dry, but they are condensed and abstract in their handling of many topics. They lack descriptive, concrete explanation and example. If the teacher knew how to illustrate, how to fill out the text with story and anecdote and personal examples, there might be a great improvement; but the majority of teachers are lacking in this kind of graphic skill. They have never been exercised in story-telling and in illustrative devices. They suppose that if a child can repeat, even poorly, what is stated in the book that will suffice. This leads inevitably to poor teaching. Teachers need to be strongly trained in the art of concrete illustration, of descriptive power, of vivid objective interpretation. Practice in lively story-telling would develop just this kind of resourcefulness in teaching, without which most of the textbook work assigned to children loses its force and becomes a species of boredom.

It is a great pity that in intermediate grades instruction should be allowed to degenerate into this lifeless rigmarole of memorized and poorly understood studies. It is not merely a waste of time; it has a still worse effect; it tires and disgusts or discourages many children who might just as well enjoy and fully appreciate what they are studying, if it were properly presented to them. Dull textbooks and dull teachers are quite certain to develop dull children. How may good story-telling be cultivated and put to use so as to offset these discouraging tendencies in the children's studies and awaken them to a lively appreciation and enjoyment of their lessons?

A good story that demonstrates clearly some strong and influential idea is a source of delight and of inspiration to all persons, old and young alike. A good story contains a vital truth in a striking, unforgetable form. The greatest teachers in the world have used simple stories to illustrate important truths to adults. It is a profound mistake to suppose that stories are suited only to primary grades. In our universities today some of our best lecture courses are biographical accounts of authors or of statesmen or of leaders in reform. The best things in the Bible for instruction are stories. The wonderful Greek people were educated in the old Greek stories. The greatest poets are those who can poetize the best story. The ablest teachers have been those who have known how to use the best stories in the strongest way. Here is a field in which the energetic teacher can train and develop herself in the most promising and effective method.

One reason why a story, orally told by the teacher, is very profitable is because it compels the teacher to fit what she says to children, to their understanding and interest. A suitable story well told always commands the undivided attention of children. Here is one case, at least, in which the teacher becomes a real teacher, by suiting what she has to say to the age and understanding of the particular children at hand. The teacher who has once thoroughly learned this lesson has learned the greatest lesson in method of teaching. It is just at this point that many teachers fail completely; they sometimes do a good deal of talking that children do not understand, and the pupils thus lose the habit of attention and become indifferent. This is as bad as it can be.

A good story well told and then reproduced adequately by the children is a simple but very superior form of good instruction. It would form a very good standard by which to measure all other kinds of instruction. It has one vital element that ought to appear in all teaching and in all effective study, namely, absorbed attention and whole-hearted devotion to the thing in hand.

A common error should be corrected at this point, namely, the idea that story-telling is a natural gift and not to be acquired by the average teacher. This is a lazy person's excuse, and merely shows an unwillingness to exert one's self so as to acquire a necessary art. We have plenty of proofs in primary schools that the average teacher who is willing to make the effort and keep it up can acquire this art without serious or unusual difficulty. The same result has been demonstrated in training teachers in normal schools. In fact, it is a matter of surprise how readily young women in normal schools acquire the art of interesting and effective story-telling. The problem has no very unusual difficulties, and perhaps it is the best introduction we have along natural lines for teacher training. We might go so far as to say that good story-telling is the simplest and most accessible form of good teaching and might serve better than anything else as an introductory step in the teaching art for all who aim at teaching as a profession.

The fourth grade is now found to be the particular spot where a complete reform in methods of instruction is demanded. Instead of the generalized abstract treatment of topics so familiar in our textbooks we need concrete object-lessons on a large scale—not the simple object-lessons of the primary grades, but the larger projects, like the coal mine, the sawmill, the river dam and lock, the building of a ship or construction of a harbor. The simple object-lessons on plants and trees and rocks and pictures of primary grades should now give way to larger units of thought that can be objectively or descriptively illustrated, such as the building of the Brooklyn Bridge, the boring of a mountain tunnel, the construction of a railway to the top of Mt. Washington or the settlement of Philadelphia by William Penn. Good stories like that of Damon and Pythias and biographies of adventure like Fremont's or Sir Francis Drake's fall under this head.

Indeed, we have a surplus of good story material exactly suitable for these intermediate grades. So valuable is this story material for several important purposes that we may take time here to discuss and illustrate it somewhat fully.

The frontier stories of life in the United States, including explorers like John Smith, La Salle and Lewis and Clarke, stand first in the list. They are stalwart, heroic characters, and their personal experiences are full of adventure. They introduce children alike to the history and geography of our country in a way that is startlingly genuine and realistic. In such stories children learn how to interpret and use maps, and to sketch river and plain and mountain districts in direct association with important men and events that leave an indelible impress. In connection with such great stories we could master a large part of the most important facts of American geography as a background for some of our best history. We can do two things in the same time and with far better results than we are now doing either the geography or history alone. These stories also include the ocean navigators, like Columbus, Magellan and Captain Cook. They are important historical units of thought, as well as good stories. They express in vigorous life forms the most energetic spirit and aspiration of those times; in short, they interpret history in its most powerful tendencies.

A second series of biographical narratives of great interest and value are those of inventors and scientific biscoverers, as Fulton, Franklin, Morse and Stephenson. The modern world finds much of its meaning in the use of these inventions, as the steam engine, the rotary printing press, the microscope, the electric motor. Such stories require to be worked out in a full descriptive explanation of the struggles, perseverance against obstacles and large results which marked such efforts. Usually these inventions are projects, wrought out by individuals, showing self-reliant confidence in one's own ideas and skill.

Another group of these stories has come down to us out of the world-famous traditions of different nations, as the stories of Cincinnatus and Horatius among the Romans, Tell in Switzerland, Roland in France, Alfred in England, and Sir William Wallace in Scotland. Such stories also bring out the striking national characteristics of the leading nations, and have historical value as interpreters of life.

Quite a different group of stories are those of famous authors, as Sir Walter Scott, Washington Irving, Charles Dickens, Robert Burns, John Bunyan and Daniel Defoe.

For the grammar grades still another series of great and interesting biographies may be mentioned; among these are Samuel Adams, Patrick Henry, Alexander Hamilton, Daniel Webster, Abraham Lincoln and other statesmen. The suggestion of these various groups and many others that might be mentioned proves how extensive and how superior in quality these biographical stories are that belong in intermediate and grammar grades.

A large number of these stories have been prepared in appropriate form for school use in books to be had in a good school library. We are just beginning to realize what a rich heritage we have for the school in such appropriate biography, and in the near future much better books will be produced for our help in exploiting the lives of the best men and women of our own and of other countries.

The important point to be stressed at the present time is the full mastery and use of these remarkable materials by teachers, especially their oral treatment in an elaborate and thoroughly productive way. The development of a skilled technique in the handling of biographical stories in intermediate grades corresponds to the high value of these materials for the best educative purposes. The topics themselves are deserving of a first-class method, and there is no kind of subject matter that satisfies so well the needs of the children.

It should not be supposed that skill and proficiency in story-telling will come without serious effort. First of all, it requires a full measure of detailed descriptive knowledge. The personal element, including anecdote and adventure and individual traits, is essential. It requires also a constructive imagination which produces a rich imagery. It sees situations vividly, and describes actions with animation. One should read and study as examples the old story-tellers, like Dickens, Stevenson, Scott, Macaulay, Irving, Bunyan, Kingsley and Homer. They have a vivid style and a command of picturesque language. Even a touch of humor and of fun is often admirable.

A story also should be well thought out and organized. Its leading episodes should stand out as distinct pictures, and these should be properly arranged in a natural, developing order. Minor facts and topics should be made tributary to these important centers. In brief, thoughtful organization is required in a good story. But good teaching in all valuable subjects should exhibit these orderly traits. The full mastery of good stories as a preparation for teaching them is a good model to imitate in other kinds of teaching.

In order to tell a story well we should appropriate the language and imagery that fits its peculiar environment. The Robin Hood stories acquire a special force and relish due to the quaint old English in which they are told. Frequently a story-teller can improve the story by gesture and simple dramatic action, and by drawings, even though crude, on the board. Good story-telling requires flexibility and quick mental adjustment so as to meet and express new and striking situations. But the teacher in any case has use for this kind of resourcefulness, this fullness of knowledge and readiness, aptness in the use of good English and in striking imagery.

Teachers sometimes prefer to read the story from a book. But the best tales deserve to be completely mastered, so that they can be presented vividly without recourse to the book. The teacher will give it a much stronger presentation if she knows it well enough to tell it in her own way. The complete mastery of a good story for teaching uses is a far more serious undertaking than teachers have been accustomed to consider it. It is, when accomplished, a superior mark of professional proficiency in teaching.

Another reason why teachers should acquire this pleasant and profitable art of story-telling is that it paves the way for a better treatment of projects and type studies in geography, in history and in science. In intermediate grades teachers should break away from close adherence to school books and launch out upon a free oral treatment of topics. Slavery to the textbook is one of the worst forms of weakness and pedantry in teaching. This requires not only fuller knowledge and stronger mastery of the subject by the teacher, but it leads naturally to a more vital and concrete treatment of topics. The teacher in oral work sees the need of making instruction clear and obvious. Where an illustration is needed, she uses it. She introduces a variety of illustrations and calls for full statements and clear demonstrations from the children. Oral instruction may move somewhat slowly, but it is more sure-footed, better grounded in complete understanding. Book knowledge memorized from a textbook has some advantages, but it is in constant danger of being merely verbal, of lacking in depth and clearness of thought. After a subject has been fully discussed, illustrated and understood, it may be well to learn the textbook statement as a condensed formulation of the conclusions reached. But without illustrative background and demonstration, the textbook statements are extremely deficient.

Instruction in fourth and fifth grades needs to be greatly expanded and enriched with concrete illustrations. So important is this that a new demand is now set up for enlarged *object-lessons* in these grades. The fully-developed object-lesson is another name for the project or type study. A project is a single objective enterprise in a full, concrete setting. A type study is always an individual case, elaborately described.

The demand now being made for projects is a distinct and pronounced emphasis of concrete experience gained through direct contact with life problems. All the important school ideas are to be worked out in a practical life environment. This would put an end at once to the memorizing of dull abstractions. It would throw all instruction into the arena of life itself, where the large active forces, energetic men and women, are at work developing and executing real projects.

The same kind of vital interest that we find in a good story should be present in every school topic. For this reason we emphasize first-class story-telling and its cultivation in school. The teacher who has gained this art of vivid, concrete demonstration will be a better teacher in whatever he undertakes, whether a geography topic on Paris, a history subject such as Hannibal's march against Rome, or a science treatment of the circulation of the blood. It is this kind of life-like, realistic embodiment of knowledge into commanding object-lessons that is most of all needed in intermediate grades.

By introducing this plan of concrete and vital instruction in the fourth and fifth grades, we are entering upon a reform movement in teaching which will bring into operation more effective principles of teaching in grammar grades and in high school. A poor, dull system of instruction in the fourth and fifth grades stretches its evil influence through the later years of study. A reconstruction of the course of study and of modes of teaching should be made effective all along the line. The place to begin is in the fourth grade by introducing big, strong object-lessons or projects which give full scope to concrete methods of teaching. The important topics should be thoroughly cultivated in a rich productive soil of full, inspiring knowledge. In this way the fundamental ideas get to growing vigorously in intermediate grades and will continue to grow and organize the best knowledge materials coming on in the later years of study.

One criticism should be met that is sometimes raised against good story-telling and fully developed type studies in intermediate grades and later. The teacher in this plan is apt to become a sort of lecturer who pours out her full knowledge, and children are mere recipients—not active and independent thinkers. The teacher does too much of the learning and thinking and organizing, and the pupils do little of it. They fail to develop their own powers.

Self-activity is, after all, the law of growth, and story-telling and reproduction should increase and foster self-activity or it fails in the essential thing. Good story-telling should not hamper a child's freedom of thought, but rather should stimulate it. It should, in fact, emancipate him from the fixed statements of the book and put his own thoughts in action. A good story-teller will frequently stop and ask a question or pause gladly to hear a child's question. Good story-telling should be constantly setting up problems for children to think out, and should not be in haste to get a prearranged answer. Story-telling is naturally interspersed with discussion which presents the child with his opportunity to think in his own way.

It is well to observe also that a good story is well organized. It has in it a developing idea that takes its natural course and is the basis for connected thinking. Children, by traveling along the lines of well-organized stories, drop into these habits of connected thinking. Early training in organization is best achieved by mastering stories and typical studies which exhibit simple, strong sequences in thought. Even adults are very slow and halting in power to organize, unless they have studied good demonstrations of well-organized topics. Stories, projects and type studies should always be standard objective examples of organization. They should be handled in such a way in classes as to bring into clear evidence the leading features of good connected thinking, by the proper use of outlines and by questions and discussions.

Children should have opportunity also from time to time to invent organizations, to devise and plan out a topic or story or project. This appears clearly in compositions, in constructive projects, in gardening and farming, and in a variety of school and social enterprises. (See stories—Intermediate and Grammar grades—Index.)

The following stories have been employed with great success in many schools, and they are offered here for the benefit of the teacher whose fund of good stories is limited:

THE HISTORY OF WHITTINGTON

Dick Whittington was a very little boy when his father and mother died. He strolled about the country as ragged as a colt till he met with a wagoner who was going to London. This wagoner gave him leave to walk all the way by the side of his wagon, without paying anything for his passage. This pleased little Whittington very much, as he wanted to see London. He had heard that the streets were paved with gold, and he was willing to get a bushel of it. But how great was his sorrow, poor boy! when he saw the streets covered with dirt instead of gold. He found himself in a strange place, without a friend, without food and without money.

In this distress he asked help of several people, and one of them bid him, "Go to work for an idle rogue." "That I will," says Whittington, "with all my heart. I will work for you, if you will let me."

The man who thought this saucy (though the poor lad meant only to show his readiness to work), gave him a blow with a stick which cut his head so that the blood ran down. He laid himself down at the door of one Mr. Fitzwarren, a merchant, where the cook saw him and ordered him to go about his business or she would scald him. At this time Mr. Fitzwarren came home and began also to scold at the poor boy, bidding him to go to work.

"I shall be glad to go to work," said Whittington, "if somebody will give me work to do. I shall be able if I have something to eat. I have had nothing for three days. I am a poor country boy, and know nobody."

He then tried to get up, but he was so weak that he fell down again. The merchant told the servants to take him in and give him some meat and drink. He might help the cook to do any dirty work that she had to set him about.

Whittington would have lived happily with this worthy family had he not been bumped about by the cross cook. She must be always roasting or basting, and when the spit was idle she turned her hand upon poor Whittington. At last Miss Alice, his master's daughter, was informed of it. She was sorry for the poor lad, and made the servants treat him kindly.

Besides the crossness of the cook, Whittington had another trouble to get over before he could be happy. He slept in the garret, where a number of rats and mice often ran over his nose and disturbed him in his sleep. After some time a visitor at his master's house gave him a penny for brushing his shoes. This he put into his pocket, and the next day, seeing a woman in the street with a cat under her arm, he ran up to ask the price of it.

"The cat is a good mouser, and is worth a deal of money," said the woman. "But I have but one penny in the world," explained Whittington, "and I need a cat sadly."

"Take her," said the woman, "and may she bring luck with her."

This cat Whittington hid in the garret, for fear she would be beaten by his enemy, the cook. She soon killed or frightened away the rats and mice, and he could sleep as sound as a top.

Soon after this his master, who had a ship ready to sail, called for his servants, as his custom was, in order that each of them might venture something to try their luck. Whatever they sent was to pay neither freight or custom. He thought that God would bless him the more for his readiness to let the poor partake of his fortune.

All the servants came but poor Whittington, who, having no money nor goods, could not think of sending anything to try his luck. But his good friend Alice sent for him.

She offered to give something for him. "That will not do," said her father. "It must be something of his own." "I have nothing but a cat which I bought with the penny given me," said Whittington. "Fetch thy cat, boy," said the merchant, "and send her." Whittington brought poor puss and gave her to the captain, with tears in his eyes. He feared he should now be disturbed by the rats and mice as much as ever. All the company laughed at this adventure but Miss Alice, who pitied the boy and gave him money to buy another cat.

While puss was beating the billows at sea, poor Dick was severely beaten at home by the cross cook. She used him so badly and made such game of him for sending his cat to sea, that at last the poor boy ran away from his place. Having packed up the few things he had, he set out very early in the morning on All-Hallows Day. He traveled as far as Holloway, and there sat down on a stone to consider what he should do. Bow bells, of which there were only six, began to ring. He thought their sounds said to him:

"Turn again, Whittington,
Thrice Lord Mayor of London."

"Lord Mayor of London!" said he to himself. "What would not one endure to be Lord Mayor of London, and ride in such a fine coach? Well, I'll go back again, and bear all the pommeling and ill-usage of Cicely rather than miss being Lord Mayor!" So home he went, and happily got into the house and about his business before Mrs. Cicely was out of bed.

We must now follow Miss Puss to the coast of Africa. The ship which had the cat on board was driven by contrary winds on a part of the coast of Barbary. The Moors living here were unknown to the English. Our men were met with civility. The captain, in order to trade with them, showed them the goods he had on board and sent some of them to the king of the country. The king was so well pleased that he sent for the captain and the factor to come to his palace, which was about a mile from the sea. Here they were placed, according to the custom of the country, on rich carpets flowered with gold and silver. The king and queen being seated at the upper end of the room, the dinner was brought in. But no sooner were the dishes put down but an amazing number of rats and mice came from all quarters and devoured all of the meat in an instant.

The factor, in surprise, turned to the nobles. "Are not these vermin hateful to the king?" he asked. "Oh! yes," said they, "very hateful; the king would give half of his wealth to be freed from them. They not only destroy his dinner, as you see, but they attack him in his chamber, and even in bed. He is obliged to be watched while he is sleeping for fear of them."

The factor remembered Whittington's cat. "Oh, King," he said, "I have a creature on board my ship that would kill these vermin at once." The king's heart heaved so high at the joy that the news gave him that his turban dropped off his head. "Bring this creature to me," said he. "Vermin are dreadful in our court. If she will do what you say I will load your ship with gold and jewels in exchange for her." The factor, who knew his business, answered, "I do not wish to part with her, Your Majesty, for when she is gone the rats and mice may destroy the goods in my ship. But to oblige Your Majesty I will fetch her." "Run, run," said the queen. "I am impatient to see the dear creature."

Away flew the factor and returned with the cat just as the rats and mice were devouring another dinner which had been brought in. He put down Miss Puss, who killed a great number of them.

The king rejoiced greatly to see his old enemies destroyed by so small a creature, and the queen was highly pleased. "Bring the creature here. I desire to look at her," she demanded. The factor called, "Pussy! pussy! pussy!" and she came to him. He then presented her to the queen, who started back, and was afraid to touch a creature who had made such havoc among the rats and mice. However, when the factor stroked the cat and called, "Pussy! Pussy!" the queen also touched her and cried, "Putty! putty!" for she had not learned English.

He then put her down on the queen's lap, where she, purring, played with Her Majesty's hand and then sang herself to sleep.

The king was charmed with Miss Puss and her exploits. When he was told that her kittens would stock the whole country, he bought the whole ship's cargo, and then gave ten times as much for the cat as all the rest amounted to. On which, taking leave of their majesties and courtiers, our countrymen sailed with a fair wind for England.

At early dawn Mr. Fitzwarren arose to count over the cash and settle the business for the day. He had just entered the counting house and seated himself at the desk, when somebody came, tap, tap, at the door. "Who's there?" said Mr. Fitzwarren. "A friend," answered the other. "What friend can come at this unseasonable time?" "A real friend is never unseasonable," answered the other. "I come to bring you good news of your ship *Unicorn.*" The merchant bustled up in such a hurry that he forgot his gout, opened the door, and who should be seen waiting but the captain and factor. They gave him a cabinet of jewels and a bill of lading, for which the merchant lifted up his eyes and thanked Heaven for sending him such a prosperous voyage. Then they told him the adventures of the cat, and showed him the cabinet of jewels which they had brought for Mr. Whittington. Upon which he cried out with great earnestness,

"Go send him in, and tell him of his fame,
And call him Mr. Whittington by name."

Some who were present told him that this treasure was too much for such a poor boy as Whittington, but he said: "God forbid that I should deprive him of a penny; it is his own, and he shall have it to a farthing."

He then ordered Mr. Whittington in. The boy was cleaning the kitchen, and would have excused himself, saying, "The counting-house floor is clean, and my shoes are dirty and full of hob nails." The merchant, however, made him come in and ordered a chair set for him. Thinking that they meant to make fun of him as had too often been the case in the kitchen, he said, "I beseech you master, do not mock a poor, simple fellow who intends no harm. Let me go about my business." The merchant, taking him by the hand, said: "Indeed, Mr. Whittington, I am in earnest with you, and sent for you to tell you of your good fortune. Your cat has brought you more money than I am worth in the world, and may you long enjoy it and be happy."

When Whittington saw the treasure and knew that it really belonged to him, he fell upon his knees and thanked the Almighty for his care of such a poor creature. He then laid all the treasure at his master's feet. The good merchant refused to take any part of it. "I rejoice heartily at your good fortune," he said, "I hope this wealth will be a comfort to you and make you happy." "But my mistress and my good friend, Miss Alice, will they not take a part of this treasure?" asked the boy. "We are happy in your success, and wish you the greatest happiness," replied Alice, "but we desire none of your fortune." He then rewarded the captain, the factor and the ship's crew for the care they had taken of his cargo. He likewise gave presents to all the servants in the house, not forgetting even his old enemy the cook, though she little deserved it.

Mr. Fitzwarren advised Mr. Whittington to send for the tailor and dress himself like a gentlemen, and made him an offer of his house to live in till he could provide himself with a better.

Now it came to pass when Mr. Whittington's face was washed, his hair curled, and he was dressed in a good suit of clothes, he turned out a fine young fellow. Being now independent, he soon gained faith in himself, and in a little time dropped that sheepish manner which had been caused by low spirits. He soon became a sprightly and good companion, and Miss Alice, who formerly pitied him, now fell in love with him.

When her father saw they had this good liking for each other he proposed a match between them, to which both parties cheerfully consented. The Lord Mayor, court of aldermen, sheriffs, the Royal Academy of Arts, and a number of great merchants attended the wedding.

History further relates that they lived very happily, had several children and died at a good old age. Mr. Whittington served as Sheriff of London and was three times Lord Mayor. As Mayor he entertained King Henry V and his queen after his conquest of France. The King, because of Whittington's merit, said, "Never had a prince such a subject," which being told to Whittington at the table, he replied, "Never had subject such a king." His Majesty, out of respect to his good character, conferred the honor of knighthood on him soon after.

Sir Richard, many years before his death, constantly fed a great number of poor citizens, built a church and a college, with a yearly allowance for poor scholars, and erected a hospital. He also built Newgate for criminals, and gave liberally to the hospital and other public charities.

LANDGRAVE LOUIS OF THURINGIA

At the death of his father, Louis became landgrave, or overlord, of all Thuringia, a large state in Central Germany. At that time, more than seven hundred years ago, the lords of the land lived in strong castles built on hilltops or on rocky cliffs close by the rivers. The poor people, or peasants, lived in huts upon the land, which they tilled for their lords, or in a humble village built at the foot of the castle in which the rich lord dwelt. Scattered about this beautiful hill-country of Thuringia were many castles, in which dwelt the lesser nobles or barons who looked up to Louis as their ruler and prince. He lived in a great castle at Neuemburg.

As ruler of the whole country Louis wished to be kind and just to every one—to the strong barons who lived in the castles, and to the poor peasants who labored in the fields. But the barons soon saw that Louis was of a mild and easy temper, and that he did not punish evil doers severely. Some of them began to be harsh and cruel to the peasants. These poor people were compelled to work hard in the fields all day, and their pay was held back or not given at all. In fine weather they must work in their master's fields, gathering the crops, and in bad and rainy weather they were free to gather the harvest on their own poor lands. Their hay was spoiled by rain, and their wheat moulded in the shock. Their families suffered, but they feared to complain lest they should be worse treated.

Three times every year Louis held court as judge and ruler of Thuringia. He sat in judgment on all cases of wrong-doing brought before him. Every one, even the poor peasant, could make complaint before him of any injustice he had suffered.

When the peasants brought their complaints before Louis, he reproved the barons for their harshness and injustice to the poor, but he also spoke to them kindly, hoping by good advice and kind words to check their wrongdoing. But the lordlings hardly listened to his words. They laughed secretly at his mild speeches and called him *Louis the Soft.* The common people in the villages and peasants in the fields were suffering, and they often said: "Louis is Prince and Overlord of all the land, but he is not fit to rule."

One day, as was his custom, Louis went to hunt in the Thuringian forest. Becoming separated from his followers, while pursuing the game, he wandered about and lost his way. Night came on and he saw, in the distance, through the trees, a light. Going toward it, he came to a smith working in his shop beside a stream. Louis was clad plainly in hunter's dress, with a horn hanging over his shoulder. The smith, seeing the stranger approach, asked "Who art thou?" "I belong to a hunting party of the landgrave Louis, and have lost my way," was the reply. The smith, taking an iron from the fire, went on with his work as he said, "The Landgrave Louis! Humph! Whoever speaks his name should wipe off his mouth."

Louis did not see fit to reply to this rough speech, but waited the smith's pleasure.

After some time, as he lifted his iron from the anvil to replace it in the fire, the smith said, "Well, I will keep you for the night. You can make shift with a bunch of straw. We poor people have no beds. Out in the shed, there, you will find some straw. You and your horse make the best you can of that. It is not for your master's sake that I keep you overnight."

Without further words, but quiet and thoughtful, Louis turned to the shed, tied his horse in a corner, smoothed out the straw and laid himself to rest. But he could get no sleep. The smith pounded at his forge the whole night through. He pulled the bellows, heated the iron and struck upon it till the sparks flew. As he smote the hot iron with his heavy hammer, at every blow he said: "Landgrave, harden thyself! Make thyself as hard as iron." And he kept on scolding and rebuking the prince. "Louis, now become hard, thou evil, worthless lord. Dost thou not see how the barons oppress their servants, the poor peasants?"

The smith's apprentice, too, spoke with scorn of Louis, the Prince, and his soft speeches. As the night went on he told of the wicked deeds of Louis' own knights, and how the peasants were mistreated by the barons. He said, "Often when the wild game escapes from the woods and hunting grounds of the barons, it gets into the peasant's fields and eats up the young grain. If the peasants kill the game, the barons kill the peasants. You have heard of old man Kanz, and how he was treated? He and his wife were ordered to work in his master's field, but he could not come because his horse was sick, so sick that it soon died. Kanz was hauled out of bed before sun up. He and his wife were hitched to the plow and driven with the whip. They now lie sick and feeble in their poor hut."

"Yes, and the potter by the creek, who makes the clay pipes! him and his wife they drove out of house and home, because he would not pay taxes for the spring which flows in his own garden."

"Soon they will be taxing the air we breathe," said the smith, "because it blows out of their forest. As the hunters chase the deer into the net, so the tax collectors chase the red foxes (the gold coins) into the wallet. And when the common people complain, no one is willing to help them. For the prince takes no note of it, and the barons slyly laugh at him as a poor weakling, and hold him of no account."

Again the smith smote the iron and cried: "Harden thyself, Louis," and thus it went on the whole night through.

Lying on his bed of straw, the Landgrave Louis listened to these bitter complaints against himself and tales of wrong, and he took them to heart. He resolved for the future to be strong and severe in his temper. In the morning he took the rough hand of the smith into his own, thanked him for his kindness, and rode homeward in earnest thought.

Not long thereafter, one of Louis' barons was accused before him of lashing his servant with a riding whip till the poor man's back bled. Louis was about to punish the evil-doer for his cruelty, when a group of barons came before him and interfered, saying he must not dare to punish a man of rank for the sake of miserable peasants. When Louis saw these men were bent on mischief, and that they refused to submit to him as their ruler, he called his own faithful knights and followers around him. He then ordered his armed knights to sieze and arrest the rebel barons. They were taken as prisoners to Louis' castle at Neuemburg.

Here he called them before his judgment seat and said: "The oath which you swore, to do justice and right, you have not kept. Were I to punish you as your wrong-doing deserves, I would have you put to death. But then I would but kill my own servants. And if I should take money from you as fines for your evil conduct, you rich people would care little for that. Many evil-minded ones would say that I was greedy for gold, and many a foolish person would repeat this story. If I should let you go unpunished, you would care little for my anger, and would go on wronging and abusing the poor peasants. That I will not allow."

Prince Louis then conducted them, under guard, to a field near by his castle. In this field a plow was standing. To this plow he hitched the unfaithful barons, four at a time, and began to plow with them. His servant held the plow, but he himself, with whip in hand, drove on the team of four till they bent themselves to the hard labor, and even fell to the earth as they tugged at the plow. When he had plowed one furrow round the field, he hitched up four other of the lordlings and drove them on round another furrow. In this way he plowed the whole field.

When it was finished, he marked the field by setting up great stones for a lasting remembrance, and named it the "Barons' Field."

The humbled barons were taken back to the castle of Neuemburg and required there to take the oath of service a second time and swear obedience. The story of the barons' punishment spread through all the land from end to end.

From this time forward the Prince was much feared by evil doers. Those nobles who had been hitched to the plow, when they heard his name mentioned, remembered their shame and disgrace. Some of them were angry because he had punished them so severely for the sake of the poor peasants. Publicly and secretly, these foes sought after his life. When he caught them in their wicked plans he had them put to death. For this reason he had many enemies. To protect himself he wore a strong coat of mail and came in time to be known as "the man of iron."

The common people, however, breathed free and rejoiced in his severe but righteous rule. When the peasant, sitting at table with his children, thought of these things, he blessed the Prince, because he helped the common people and loved them. When he met them they greeted him with joy, and followed him with friendly words and looks, showing their love and confidence. Then they would say to their servants: "In the landgrave's smithy he was hardened." And in time people learned to say of anyone who was hard and severe against wrong and wickedness, and because of gentle words did not allow his heart to soften and his will to weaken, "He has been hardened in the landgrave's smithy."

ALEXANDER AND BUCEPHALUS

[Alexander was the son of Philip; it was said that at the age of 33 he wept because he had no more worlds to conquer.]

A trader brought the horse Bucephalus to Philip, offering to sell him for thirteen talents; but when they went in the field to try him, they found him very vicious and hard to manage. He reared up when they tried to mount him, and would not so much as endure the voice of any of Philip's horsemen. They were leading him away as wholly useless and stubborn, when Alexander, who stood by, said, "What a fine horse do they lose, for want of address and boldness to manage him!" Philip at first took no notice of what he said; but when he heard him repeat the same thing several times, and saw he was much vexed to see the horse sent away, "Do you reproach those who are older than yourself," he said, "as if you knew more, and were better able to manage him than they?"

"I could manage this horse," replied he, "better than others do.

"And if you do not," said Philip, "what will you forfeit for your folly?"

"I will pay," answered Alexander, "the whole price of the horse." At this all the company fell a laughing.

As soon as the wager was settled amongst them, he at once ran to the horse, and, taking hold of the bridle, turned him directly towards the sun, having noticed that he was disturbed at the motion of his own shadow. Then letting him go forward a little, still keeping the reins in his hands and stroking him gently when he found him begin to grow eager and fiery, he let fall his upper garment softly, and with one nimble leap safely mounted him. When he was seated, by little and little, he drew in the bridle, and curbed him without either striking or spurring him. Presently, when he found him no longer stubborn, and only impatient for the course, he let him go at full speed, urging him now with a commanding voice, and now with his heel. Philip and his friends looked on at first in silence and fear for the result, till, seeing him turn at the end of his course and come back rejoicing and triumphant for what he had done, they all burst into shouts of applause. His father, shedding tears, for joy, it is said, kissed him as he came down from his horse, and in his transport said, "O my son, look thee out a kingdom equal to and worthy of thyself, for Macedonia is too little for thee."

CRUSOE FINDS A FRUITFUL VALLEY

(From *Robinson Crusoe*)

At the end of this march I came to an opening, where the country seemed to descend to the west; and a little spring of fresh water, which issued out of the side of the hill by me, ran the other way, that is, due east; and the country appeared so fresh, so green, so flourishing, everything being in a constant verdure or flourish of spring, that it looked like a planted garden.

I descended a little on the side of this delicious vale, surveying it with a secret kind of pleasure, though mixed with my other afflicting thoughts, to think that this was all my own; that I was king and lord of all this country, and had a right of possession; and, if I could convey it, I might have it in inheritance as completely as any lord of a manor in England. I saw here abundance of cocoa-trees, orange and lemon and citron trees; but all wild, and very few bearing any fruit, at least not then. However, the green limes that I gathered were not only pleasant to eat, but very wholesome; and I mixed their juice afterwards with water, which made it very cool and refreshing.

I found now I had business enough to gather and carry things home; and I resolved to lay up a store, as well of grapes as limes and lemons, to furnish myself for the wet season, which I knew was approaching.

In order to do this, I gathered a great heap of grapes in one place, and a lesser heap in another place, and a great parcel of limes and lemons in another place; and, taking a few of each with me I travelled homeward; and resolved to come again, and bring a bag or sack, or what I could make, to carry the rest home.

When I came home from this journey, I contemplated with great pleasure the fruitfulness of that valley, and the pleasantness of the situation; the security from storms on that side of the water and the wood; and concluded that I had pitched upon a place to fix my abode which was by far the worst part of the country. Upon the whole, I began to consider of removing my habitation, and to look out for a place equally safe as where I was now situated, if possible, in that pleasant, fruitful part of the island.

AN ADVENTURE OF DANIEL BOONE

Daniel Boone was once hunting among the wild woods and canebrakes along the Green River, in Kentucky. It was a choice hunting ground, abounding in deer and bear and buffalo, beside smaller game. There was also much danger from prowling Indian bands who came to this region. One night Boone had eaten his supper and had put out the fire before lying down to sleep. He was always on his guard, and kept himself concealed. On this night he felt safe as he lay down in a shelter of grass and bushes to sleep.

But, unknown to him, the Indians had been on the watch, and had quietly crept up to his hiding place. Suddenly he was seized by many strong hands. He quietly controlled himself, as he saw how impossible it was to break loose from this band of strong men. His arms and hands were tightly bound. Seeing no hope of escape, Boone kept a steady nerve and showed the Indians that he was good-natured and fearless.

When they reached the Indian camp even the women expressed great joy at the capture of such a bold hunter and fighter as Boone. They made it plain by words and signs that on the next day they would torture and kill their enemy. They had taken from Boone his gun and hunting knife, and in searching the pockets of his hunting shirt they found a flask of liquor, or strong whiskey. At the sight of this the faces of the Indians spread into a broad grin, and soon the bottle was passing from mouth to mouth. Boone noticed that the women drank more freely than the men.

All this time Boone's thoughts had been busy planning, as he said, "how he might give the rascals the slip." Suddenly the whole party was made quiet by the sound of a gun shot off far away in the woods. Alarmed by this sudden danger, the men and squaws walked to one side and talked together, pointing toward Boone. Telling the squaws to keep a careful watch over him, they picked up their guns and started out in search of this new intruder. Boone said in telling the story, "The squaws sat down again, and in less than five minutes had the bottle up to their dirty mouths, gurgling down their throats the remains of the whiskey." Soon they tumbled over and lay down asleep. Now all was quiet in the camp.

Boone was so tightly bound that he could not walk, and found it hard to move, but he was able to roll over and over on the ground. In this manner, getting near the fire, he burned off the cords from his hands and then untied his legs. He rose to his feet and stretched his numbed and stiffened limbs. Next he seized his rifle and hatchet and rejoiced to find himself free again. He was almost tempted to kill the drunken Indians who lay upon the ground, but spared them and made off quickly through the woods. But, before starting, he cut with his hatchet three large chips from an ash sapling standing by so that he might know the place again. After a swift walk Boone reached the river, crossed it and threw himself into a deep canebrake, making tracks with his feet like those of an Indian, so that they might not be tempted to follow him.

WILLIAM TELL

William Tell loved to climb among the rugged mountains that lay close about his Swiss home. With cross-bow on his shoulder he would clamber up the steep, cliffs hunting the mountain goats and other game.

He had an unerring skill with the cross-bow, and became a famous mountain climber and hunter.

One day he was walking across the market place at Altorf with Walter, his boy, when they passed by two soldiers guarding the Governor's hat, which was lifted on a tall pole. The soldiers had been set to watch the people as they passed by and to note whether they saluted the hat.

Tell passed by without salute, and the soldiers quickly seized him and held him as a prisoner for refusing to show respect to the Governor.

The common people, who were Tell's friends, rushed in to rescue him. But the Governor, Gessler, chanced to ride up just then with his armed guards, and he asked to know the cause of the tumult.

The soldier stood before Gessler and said, "Sir! we were set to guard the hat. This man, Tell, walked by and refused to bow or show respect for the hat."

Gessler (to Tell): Do you refuse to obey the command of your Governor?

Tell: My lord, I did not note the hat. I beg your pardon, and will not thus offend a second time.

Gessler: Tell, men say to me, you are a master with the cross-bow, which you carry. I would see you show your skill.

Walter: Yes, my lord, my father can strike an apple at a hundred paces.

Gessler: Is this your boy?

Tell: Yes, my lord.

Gessler: Since you are so proud of your skill with the bow and so lacking in respect for your ruler, I will set you a mark which you shall fail to hit on peril of your life. Place an apple on this boy's head at a hundred paces, and do you, Tell, strike it or forfeit your life.

Tell: My lord, you would not compel a father to take such risk and shoot at his own boy's head! You surely do not mean this.

Gessler: I mean it so, and I command you to shoot.

Tell at first refused to obey this command. But when at last he saw that the Governor was determined, he seized his bow and prepared to shoot. It was noticed that he stuck a second arrow in his belt just before shooting the apple.

Several of Gessler's friends tried to persuade him to release Tell from the shot, and while this dispute was going on, Tell let fly the arrow which pierced the apple without injuring the boy. All were astonished at Tell's wonderful skill.

Gessler (to Tell): I must praise this noble shot. But, Tell, why did you stick a second arrow in your belt?

Tell (much confused): That—that is merely custom with us hunters.

Gessler: No, Tell, speak the truth whatever it may be; your life is safe.

Tell: Well, my lord, hear this. Had my first arrow failed and had it struck the child, this second arrow would not have failed to strike you. Your life would have paid the forfeit.

Gessler (turning to his guards): Seize this rebel and bind him fast. I will see to it that he is placed where sunlight will not disturb him, and he shall cease to make trouble for those who rule! I will take him to my strong castle at Kussnacht.

With Tell as a prisoner, Gessler and his men went on board the boat and started down the lake to his castle. Just as the boat reached the middle of the lake a sudden storm broke loose and drove upon them with such fury that all were afraid of instant death. The steep, rocky sides of the mountain rose from the water and offered no place of refuge.

In this crisis all the men turned to Tell, who lay tightly bound. He, alone of those present knew how to manage a boat in such a storm. A soldier spoke: "My lord, you see we are on the brink of ruin. But Tell might save us from this storm."

Gessler: I will release you, Tell, if you can bring us out of this danger.

Tell: I can but do my best. The storm rages fiercely, and we are all alike on the verge of death.

Tell was released, and he seized the helm, giving orders to the oarsmen how to row the boat. He had his cross-bow at his side, and as he keenly watched along the shore he saw at one point a flat rock jutting out from the cliff. By his skill the boat was guided close to this rock, and, as it glided by, Tell seized his cross-bow and with one mighty leap landed himself upon the rock, and in jumping sent the boat swiftly back and away from the shore. Thus Tell was safe, and Gessler and his crew battled with the waves till the storm subsided and they at last landed at a lower point on the lake.

Gessler had made up his mind to crush the free spirit and love of liberty among the Swiss peasants, while the people themselves rose in rebellion and defended their rights. Gessler later was slain by one of Tell's arrows, and the freedom of the Swiss people was finally won. Tell, because of his bold spirit and brave exploits in this struggle for freedom, is looked upon as the hero of the Swiss people.

CINCINNATUS

Cincinnatus, a noble Roman of the olden time, was looked upon with great respect by the people of Rome. His son, Kaeso, was a bold and reckless youth who had fought with uncommon bravery in the wars which the Romans waged against neighboring tribes. Kaeso was also extremely proud and haughty, and treated the leaders of the common people with roughness and scorn. Kaeso, for some of his harsh acts, was brought to trial before the judges. After much debate between the nobles and the tribunes, it was agreed that Kaeso should appear the next day to make answer to the charges. Ten sureties he gave, and each was bound in three thousand pounds of copper. After leaving the place of judgment, he escaped that same night from Rome and went into banishment among the Etrurians. His father was compelled to pay the full sum for his sureties. To do this he sold all of his goods and went to dwell in a mean house on the other side of the Tiber where he cultivated a few acres of land.

It came to pass in the third year after these things that the Aequians broke the treaty of peace which they had made with Rome, and, taking one Gracchus for their leader, marched into the land of Tusculum. When they had plundered the country thereabouts and had gathered together much booty, they pitched their camp on Mount Aegidus. To them the Romans sent three ambassadors, who should complain of the wrong done, and seek redress. But when they would have fulfilled their errand, Gracchus, the Equian spake, saying, "If ye have any message from the Senate of Rome, tell it to this oak, for I have other business to do;" for it chanced that there was a great oak that stood hard by, and made a shadow over the general's tent. Then one of the ambassadors, as he turned to depart, made reply, "Yes, let this sacred oak and all the gods that are in heaven hear how ye have wrongfully broken the treaty of peace; and let them that hear help us also in the day of battle, when we shall avenge on you the laws both of gods and of men that ye have set at nought."

When the ambassadors had returned to Rome the Senate commanded that there should be levied two armies; and that Minucius, the Consul, should march with the one against the Aequians on Mount Aegidus, and that the other should hinder the enemy from their plundering. This levying the tribunes of the Commons sought to hinder; and perchance had done so, but there also came well-nigh to the walls of the city a great host of the Sabines, plundering all of the country. Thereupon the people willingly offered themselves, and there were levied forthwith two great armies. Nevertheless, when the Consul Minucius had marched to Mount Aegidus, and had pitched his camp not far from the Aequians, he did nought for fear of the enemy, but kept himself within his entrenchments. And when the enemy perceived that he was afraid, growing the bolder for his lack of courage, they drew lines about him, keeping him in on every side. Yet before that he was altogether shut up there escaped from his camp five horsemen that bare tidings to Rome how that the Consul, together with his army, was besieged.

The people were sorely dismayed to hear such tidings; nor, when they cast about for help, saw they any man that might be sufficient for such peril, save only Cincinnatus. By common consent, therefore, he was made Dictator for six months, a thing that may well be noted by those who hold that nothing is to be accounted of in comparison of riches, and that no man may win great honor or show forth singular virtue unless he be well furnished with wealth. For here in this great peril of the Roman people there was no hope of safety but in one who was cultivating with his own hand a little plot of scarcely three acres of ground. For when the messengers of the people came to him they found him ploughing, or, as some say, digging a ditch. When they had greeted each the other, the messengers said, "May the Gods prosper this thing to the Roman people and to thee. Put on thy robe and hear the words of the people." Then said Cincinnatus, being not a little astonished, "Is all well?" and at the same time he called to his wife Racilia that she should bring forth his robe from the cottage. So she brought it forth, and the man wiped from him the dust and the sweat, and clad himself in his robe, and stood before the messengers. These said to him, "The people of Rome make thee Dictator, and bid thee come forthwith to the city." And at the same time they told how the Consul and his army were besieged by the Aequians.

So Cincinnatus departed to Rome; and when he came to the other side of the Tiber there met him first his three sons, and next many of his kinsfolk and friends, and after them a numerous company of the nobles. These all conducted him to his house, the lictors, four and twenty in number, marching before him. There was also assembled a very great concourse of the people, fearing how much the Dictator might deal with them, for they knew what manner of man he was, and that there was no limit to his power, nor any appeal from him.

The next day before dawn the Dictator came into the market-place and appointed one Lucius Tarquinius to be Master of the Horse. This Tarquinius was held by common consent to excel all other men in exercises of war. But although he was a noble by birth and should have been among the horsemen, he had served, for lack of means, as a foot-soldier. This done, he called an assembly of the people and commanded that all the shops in the city should be shut; that no man should concern himself with any private business, but all that were of an age to go to the war should be present before sunset in the Field of Mars, each man having with him provisions of cooked food for five days, and twelve stakes. As for them that were past the age, they should prepare the food while the young men made ready their arms and sought for the stakes. These last they took as they found them, no man hindering them; and when the time appointed by the Dictator was come, all were assembled, ready, as occasion might serve, either to march or to give battle.

Forthwith they set out, the Dictator leading the foot-soldiers by their legions, and Tarquinius, the horsemen, and each bidding them that followed make all haste. "We must needs come," they said, "to our journey's end while it is yet night. Remember that the Consul and his army have been besieged now for three days, and that no man knows what a day or a night may bring forth." The soldiers themselves also were zealous to obey, crying out to the standard-bearers that they should quicken their steps, and to their fellows that they should not lag behind. Thus they came at midnight to Mount Aegidus, and when they perceived that the enemy was at hand they halted the standard.

Then the Consul rode forward to see, so far as the darkness would suffer him, how great was the camp of the Aequians and after what fashion it was pitched. This done, he commanded that the baggage should be gathered together into a heap, and that the soldiers should stand every man in his own place. After this he compassed about the whole army of the enemy with his own army, and commanded that at a set signal every man should shout, and when they had shouted should dig a trench and set up therein the stakes. This the soldiers did, and the noise of the shouting passed over the camp of the enemy and came into the city, causing therein great joy, even as it caused great fear in the camp. For the Romans cried, "These be our countrymen, and they bring us help." Then said the Consul, "We must make no delay. By that shout is signified, not that they are come only, but that they are already dealing with the enemy. Doubtless the camp of the Aequians is even now assailed from without. Take ye your arms and follow me." So the legion went forth, it being yet night, to the battle, and as they went they shouted, that the Dictator might be aware.

Now the Aequians had set themselves to hinder the making of a ditch and rampart which should shut them in; but when the Romans from the camp fell upon them, fearing lest these should make their way through the midst of their camp, they left them that were with Cincinnatus to finish their entrenching, and fought with the Consul. And when it was now light, lo! they were already shut in, and the Romans, having finished their entrenching, began to trouble them. And when the Aequians perceived that the battle was now on either side of them, they could withstand no longer, but sent ambassadors praying for peace, and saying, "Ye have prevailed; slay us not, but rather permit us to depart, leaving our arms behind us." Then said the Dictator, "I care not to have the blood of the Aequians. Ye may depart, but ye shall depart passing under the yoke, that ye may thus acknowledge to all men that ye are indeed vanquished." Now the yoke is thus made. There are set up in the ground two spears, and over them is bound by ropes a third spear. So the Aequians passed under the yoke.

In the camp of the enemy there was found abundance of spoil. This the Dictator gave wholly to his own soldiers. "Ye were well-nigh a spoil to the enemy," said he to the army of the Consul, "therefore ye shall have no share in the spoiling of them. As for thee. Minucius, be thou a lieutenant only till thou hast learnt how to bear thyself as a Consul." Meanwhile, at Rome there was held a meeting of the Senate, at which it was commanded that Cincinnatus should enter the city in triumph, his soldiers following him in order of march. Before his chariot there were led the generals of the enemy; also the standards were carried in the front; and after these came the army, every man laden with spoil. That day there was great rejoicing in the city, every man setting forth a banquet before his doors in the street.

After this, Volscius, that had borne false witness against Kaeso, was found guilty of perjury, and went into exile. And when Cincinnatus saw that justice had been done to this evil-doer, he resigned his dictatorship, having held it for sixteen days only.

FREMONT'S DISCOVERY OF SALT LAKE

In 1843 Fremont made his second trip into the Rocky Mountain region. With a party of thirty-nine men, equipped to explore mountains and wilderness, he started out to open a pathway across these little known mountains to the Pacific Ocean.

Early in September, after much wandering and hardship in crossing streams and mountain ridges, he came into the neighborhood of Salt Lake, which was then almost unknown. In the distance he saw a high hill, or butte, from which he hoped to get a first glimpse of the lake. Fremont tells in his diary of his first view across the lake:

"We reached the butte without difficulty, and climbing to the top at once, at our feet we beheld the object of our anxious search, the waters of the inland sea, stretching in solitary grandeur far beyond the limit of our vision. It was one of the great points of the exploration, and we eagerly looked over the lake in excited surprise. It was certainly a magnificent object, and, to travelers long shut up among mountain ranges, a sudden view over the expanse of waters had in it something sublime. Several islands raised their rocky peaks out of the waves, but whether or not they were timbered was still left to our imagination, as the distance was too great to determine.

"During the day the clouds had been getting black over the mountains to the westward, and while we were looking a storm burst down with sudden fury upon the lake and entirely hid it from our view. So far as we could see along the shore, there was not a solitary tree, and but little appearance of grass.

"On Weber's Fork (a stream 100 to 150 feet wide), a few miles below our last camp, the timber was gathered into groves and then disappeared entirely. As this appeared the nearest point to the lake where a suitable camp could be found, we directed our course to one of the groves, where we found good grass and abundance of rushes. The next day was spent in active preparation for our intended voyage on the lake. On the edge of the stream a favorable spot was selected in a grove, and felling the timber, we made a strong corral, or horse-pen, for the animals, and a little fort for the people who were to remain.

"We were now probably in the country of the Utah Indians, though none reside upon the lake. The India rubber boat was repaired with cloth and gum, and filled with air in readiness for the next day. Mr. Preuss, Carson, and myself, and two Frenchmen had been selected for the boat expedition—the first ever attempted by white men on this lake. The summer frogs were singing around us, and the evening was very pleasant. The provisions which Carson had brought with him being nearly exhausted, our stock was reduced to a small quantity of root. For our supper we had yampah, the most agreeably flavored of roots, seasoned by a small fat duck which had come in the way of Jacob's, the colored man's, rifle.

"Around our campfire were many guesses about the morrow and the islands we expected to visit, whether they were wooded and abounding in game. The Indians and hunters had told of whirlpools and strange dangers on the lake. The men had discovered that the boat, instead of being strongly sewed (like that of the previous year, which so triumphantly rode the course of the upper Great Platte), was only pasted together in a very insecure manner. This increased with us the sense of danger. In the boat were placed three air-tight bags about three feet long and holding five gallons each. These were filled with water and were placed in the boat with our blankets and instruments, consisting of a sextant, telescope, spyglass, thermometer, and barometer.

"We left our camp at sunrise and had a very pleasant voyage down the river, which deepened as we neared the mouth, in the latter part of the day. In the course of the morning we discovered that two of the cylinders leaked so much as to require one constantly at the bellows to keep them sufficiently full of air to support the boat.

"Although we had made an early start, we loitered so much on the way—stopping every now and then and floating silently along to get a shot at a goose or duck—that it was late in the day when we reached the outlet. The river here divided into several branches, and was so shallow that it was with difficulty that we could get the boat along, being obliged to get out and wade. We encamped on a low point among rushes and willows. Geese and ducks enough had been killed for supper at night and for breakfast the next morning. The stillness of the night was enlivened by millions of waterfowl. We hurried through our breakfast in order to make an early start and have all the day before us for our adventure.

"The channel, in a short distance, became so shallow that our navigation was at an end, being merely a sheet of soft mud with a few inches of water, and sometimes none at all, forming the low-water shore of the lake. All this place was absolutely covered with flocks of screaming plover. We took off our clothes and, getting overboard, commenced dragging the boat, making by this operation a very curious trail. After proceeding in this way about a mile, we came to a black ridge on the bottom, beyond which the water became suddenly salt, beginning gradually to deepen, and the bottom was sandy and firm. It was a remarkable division, separating the fresh waters from the lake, which was entirely saturated with common salt. Pushing our little vessel across this narrow boundary, we sprang on board, and at length were afloat on the waters of an unknown sea.

"We did not steer for the mountainous island, but held our course for a lower one, which it had been decided we should visit first. So long as we could touch the bottom with our paddles, we were very gay, but gradually, as the water deepened, we became more still in our frail *bateau* of gum cloth, distended with air, and with pasted seams. The water continued to deepen as we advanced. The lake became almost transparently clear, of an extremely beautiful bright green color, and the spray which was thrown into our boat and over our clothes was directly converted into a crust of common salt, which covered our hands and arms.

"The form of the boat seemed to be an admirable one, and it rode on the waves like a water-bird. At the same time it was slow in its progress. When we were little more than halfway across, two of the divisions between the cylinders gave way, and it required the constant use of the bellows to keep in a sufficient quantity of air. For a long time we scarcely seemed to approach the island, but gradually worked our way across the rougher sea into the smoother water, under the lee of the island. It was a handsome, broad beach where we landed, behind which rose a hill. We did not suffer our boat to touch the sharp rocks, but getting overboard, discharged the baggage and, lifting it gently out of the water, carried it to the upper part of the beach, which was composed of small fragments of rock. As there was an abundance of driftwood along the shore, it offered us a pleasant encampment.

"The cliffs and masses of rock along the shore were whitened by an incrustation of salt where the waves dashed up against them, and the evaporating water that had been left in holes and hollows on the surface of the rocks was covered with a crust of salt about one-eighth of an inch in thickness. It appeared strange that in the midst of this grand reservoir one of our greatest wants, lately, had been salt. Exposed to be more perfectly dried in the sun, this became very white and fine, having the usual flavor of very excellent common salt, without any foreign taste.

"Carrying with us the barometer and other instruments, in the afternoon we climbed to the highest point of the island—a bare, rocky peak eight hundred feet above the lake. Standing on the summit, we enjoyed a broad view of the lake, enclosed in a basin of rugged mountains, which sometimes left marshy flats and wide bottoms between them and the shore. To the southward several peninsular mountains, three or four thousand feet high entered the lake, appearing, so far as the distance and our position enabled us to determine, to be connected by flats and low ridges with the mountains in the rear. As we looked over the vast expanse of waters spread out before us and strained our eyes along the silent shores, over which hung so much doubt and uncertainty and which were so full of interest to us, I could hardly repress the great desire to explore farther. But the lengthening snow on the mountains was a plain proof of the advancing season, and our frail linen boat seemed so insecure that I was unwilling to trust our lives to the dangers of the lake. I therefore unwillingly resolved to end our survey here, and to be satisfied for the present with what we had been able already to add to the unknown geography of this region. We felt pleasure, also, in remembering that we were the first, in the history of the country, who had visited the islands and broken with the cheerful sound of human voices the long solitude of the place.''

ANDROCLES AND THE LION

A STORY OF GRATITUDE

Long, long ago, in Rome, the great theater was crowded to the very top. The emperor, in his gorgeous purple robe, sat in his box with his attendants about him, and all the people, in their best clothes, sat on the marble seats, fairly holding their breath with excitement. For they were to see the sport that they liked best of all—a very cruel sport it would seem to us. A runaway slave, who had been recaptured, was to be torn to pieces by a lion, and from the iron cage the roars of the savage beast could be heard from time to time.

Now the slave was led in, trembling. He fell on his knees in the center of the arena, and raised his clasped hands, pleading for mercy. towards the emperor, but the emperor's eyes were cold and hard, and the people shouted, "The lion! Bring in the lion."

Suddenly the great doors of the cage beneath the imperial box swung outward. There was a breathless pause, and then, slowly, as though he knew his prey could not escape him, the lion stepped out onto the sand of the arena. He was a lean and hungry lion, for he had been kept without food that he might be the more savage and furnish better sport for the spectators. O, how powerful his claws looked, and how the people who were safe on the high seats trembled as he snarled and showed his white teeth.

A moment he stood there, lashing his sides with his tail and turning his shaggy head from side to side. And then, suddenly, he spied the slave, crouched on the sand, with bowed head. The great cat began to creep slowly toward his prey, switching his tail and narrowing his eyes. The people scarcely breathed; would he never spring? Yes, he was crouching now for his leap! Just then the slave raised his head, and the lion, his powerful muscles already released for the spring, checked himself and fell short. And, marvel of marvels, instead of rushing at the cowering slave with steel claws out, the lion fairly groveled in the sand before him! He rubbed against the man and fondled him with his paws, while the noise of his mighty purring reached to the farthest part of the great theater.

Then how the people shouted! And the emperor, leaning over the railing of his box, beckoned to the slave to come near. With his hand on the lion's head, the slave approached.

"Are you a worker of magic," queried the emperor, "or how have you tamed the most savage beast of the jungle?"

"O, most gracious majesty," replied the slave—for he was a learned slave and knew how to speak to an emperor—"thou knowest that I escaped from a most cruel master and fled to Africa. There I hid in a cave on the edge of the desert, and one day there came into my cave a great lion.

"He whined and held up his paw, and I saw, sticking in it, a long thorn. Because I have always loved animals and cannot bear to see one suffer, I conquered my fear and drew out the thorn, and the beast, after licking my hands, left me.

"Thou knowest, too, most gracious sire, that I was taken and brought back to Rome, and condemned to be torn to pieces by a lion. This lion has a better memory than I have—I did not recognize him, but he knew me, and has spared my life, as thou hast seen."

The slave ceased, and the people, who had heard enough to guess at what had happened, sent up a mighty shout.

"Life and freedom! Life and freedom for the slave!" they cried.

And the emperor, to please himself as well as to please the people, said, "So great a marvel has never been seen in Rome. Both are free—the lion and the slave—and no man may again lay hands on them."

And with his hand still on the lion's head, the freed slave walked out.

THE COMING OF THE CORN

Adapted from *Hiawatha*

Hiawatha wanted, more than anything else in the world, the good of his people—that Indian tribe which he loved better than himself. As he wandered in the woods he saw the squirrel and the wild goose, the strawberry and the wild grape, and heard the splash of the fish in the river; but he wanted for his people something better than all these.

And so he built a lodge in the forest, far away from his people, and there for seven days and seven nights he fasted, all the time sending up prayers to the Great Spirit for the good of his people. On the fourth day, as he lay half faint with hunger on his bed of leaves, he looked out between the poles of his wigwam and saw approaching through the radiance of the sunset a youth whom he had never seen before.

The young man was tall and straight, and so supple that he swayed in the wind like a sapling. His garments were green and yellow, his hair was long and yellow, and above his forehead green plumes waved. As Hiawatha lay wondering whether this were vision or reality, the youth approached and spoke to him.

"Hiawatha, your prayer has been answered, because it is not a selfish prayer, but asks for the good of your people. I, Mondamin, have been sent to show you how, with labor and struggle, that great good for which you pray may come. Rise and wrestle with me."

Weakly Hiawatha rose, but with the first touch of the stranger he felt himself grow stronger, and more and more strength came to him as they wrestled till the sunset light was gone.

"Enough," cried Mondamin. "You have wrestled well, Hiawatha; to-morrow, at the same hour, I shall come again to try my strength with yours."

With the words he was gone, and Hiawatha's strength went with him. But the next day, and the next, when the sky was reddest with the sunset, Mondamin came again and wrestled with Hiawatha. Just before he vanished on that third day he said, "To-morrow is the day of your triumph. You will conquer me, and then you must lay me in a shallow grave, where the gentle rain and the warm sun may reach me. But first take from me my green and yellow garments."

And on the fourth day it happened as he had said. Hiawatha felt his strength coming to him in great waves, and he wrestled with such power that suddenly, before he knew how it had happened, Mondamin lay before him on the grass, dead.

Not quite understanding, but willing to obey, Hiawatha, stripped the soiled and torn garments from the young stranger and laid him under the soft mold. For days he watched beside the grave, keeping the earth soft above it, driving away the ravens, and pulling out the weeds. And at last, one morning, he saw peeping through the soft black earth a tiny point of green. Soon it was a long green spear, and before the summer was over there stood above the grave where Mondamin had been laid the first maize plant, with its waving green plumes and its yellow, silken tresses—the wonderful Indian corn, which Hiawatha had won as a gift for his people.

CHAPTER SIX

GEOGRAPHY

Philander P. Claxton, A.M., Litt.D.
United States Commissioner of Education

1. Scope of the Subject. The many and widely varying definitions of geography are proof that there is a marked difference of opinion among leading authorities as to what this branch of study should include. Doubtless some of the definitions are too comprehensive, and include in geography facts and principles that more properly belong to geology and astronomy. On the other hand, such a definition as "Geography is a description of the earth's surface" is too meager, since it omits one of the very important factors in determining the science, namely, man. The human phase of geography is that which lends the greatest interest to the subject; therefore, it must not be overlooked. Hence, the truest conception of geography, for school purposes, at least, is a description of the earth's surface as the home of man.

2. Departments of Geography. Geography is usually considered under three departments — mathematical geography, physical geography and political geography. Mathematical geography treats of the form and size of the earth, measurements upon its surface, its motions, and, in its broadest consideration, the relation of the earth to the sun and other bodies of the solar system. Physical geography includes those phenomena upon which life upon the earth depends, and which, taken as a whole, constitute environment. The term *physiography* is often applied to this department of the subject. Political geography treats of man and his work. Each of these departments merits further consideration.

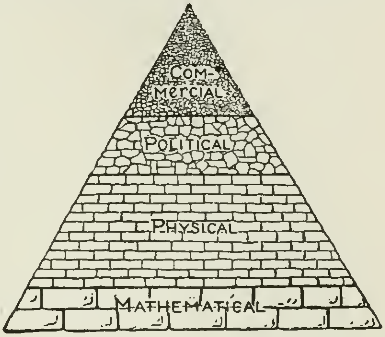
3. Relation of the Departments of Geography. The relation of these three departments of geography should be clearly understood by the teacher, since such knowledge enters into all plans for teaching the subject.

(a) MATHEMATICAL GEOGRAPHY. In the elementary course of study only such portions of mathematical geography should be considered as are necessary to give the pupils an understanding of the other departments. The form and size of the earth, its motions, latitude and longitude and the relation of longitude to time are subjects that include the subjects that should be considered in the elementary course. Beyond the elementary facts of each of these topics it is not safe to go, because further discussion involves conceptions and generalizations which are altogether too abstract and too difficult for pupils of grammar school age.

(b) PHYSICAL GEOGRAPHY. Physical geography is really the foundation of the subject for school purposes, and the teacher should have a thorough knowledge of this department of the science. That knowledge should include the great facts of physical geography, such as the facts of relief; the relative positions of the great land masses and oceans; the underlying principles and laws of climate; the effect of climate upon life; the distribution of life, both vegetable and animal, and the effect of all these on man and his work.

The teacher should have a few illustrations of these facts well thought out, and be able to apply them as needed. The following are good examples: comparison of the temperature at the foot of a mountain and on its summit, on a summer day; comparison of the climate of the British Isles with that of Labrador, and the comparison of winter in Maine and in the state of Washington. Comparison of animal and vegetable life should also be made in a similar manner.

While these great facts and their relations to each other and the laws upon which they depend must be understood by the teacher, the systematic study of physical geography should not be attempted below the high school. The truths which the pupils in the elementary school need to know should be taught as facts as occasion requires. The causes for the phenomena discussed can well be deferred until a later period.



DEPARTMENTS OF GEOGRAPHY

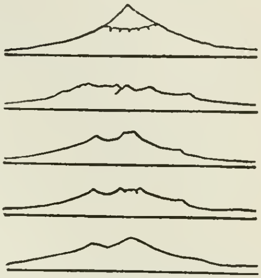
(c) Political Geography. Political geography treats of man and his work. This has the greatest interest for pupils, and properly occupies the chief attention in the geography work of the elementary grades. The relation of political to physical geography, and its dependence upon that department of the science, are brought out and emphasized in the method of treatment of the subject. We cannot study the geography of any race or nation without studying its environment and seeing how that environment has affected its social, political and industrial life. Therefore, the desired end is reached in the most satisfactory manner by using political geography as the center of instruction, and relating to that such facts in physical and mathematical geography as may be necessary.

(d) Commercial Geography. The world's industries have assumed such vast proportions, and are, through modern means, so closely linked together, that they constitute a department of geography a knowledge of which is of the utmost importance. Commercial geography includes a study of the industries and commerce of the world and their economic relations to mankind. It is also known as commercial and industrial geography.

4. Purposes. The chief purposes in teaching geography are (1) to give the pupils a knowledge of the facts of geography found in their immediate vicinity, such as the animal and vegetable life, and the occupations with which they meet every day; (2) to lead the pupils to understand the underlying principles and laws of geography, such as the laws governing temperature, rainfall and the distribution of life; (3) to lead the pupils to apply these laws and principles in determining geographical conditions of places with which they are not familiar by experience; (4) to lead pupils to see how geographical conditions control the customs, habits and occupations of men; (5) to enable the pupils to see how and to what extent man has affected geographical conditions, as by the construction of canals, by irrigation, and by denuding large areas of forests; (6) to create an intelligent interest in the great world and its activities.

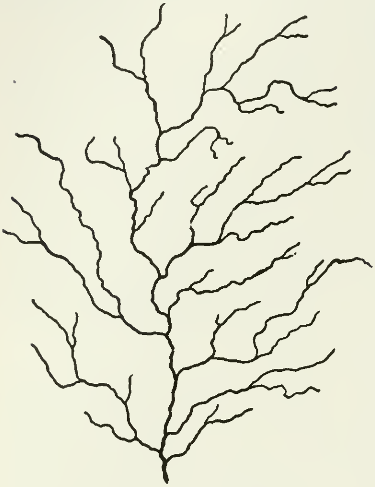
5. Preparation of the Teacher. "Teachers cannot teach that which they do not know. If teachers know little else but mental pictures of maps and an isolated mass of conglomerated facts, they cannot teach geography." Many superintendents and principals from their experience realize the truth of this statement. Doubtless more teachers fail to secure the desired results in their geography work from lack of sufficient preparation than from any other cause. The broad field covered by geography and its relation to numerous other branches makes a thorough preparation on the part of the teacher an essential to success. This preparation should be along the following lines:

(a) GEOGRAPHY. As already stated, it is not enough for the teacher to know simply the facts of geography, such as the names and locations of places and capitals and the boundaries of states and countries. She must understand the principles and laws of the science and their application, for instance, such as the relation of altitude to temperature, the relation of winds and altitude to rainfall, the principles governing the distribution of life, both vegetable and animal, and the relation of all these conditions to man and his work. The teacher must have a general idea of how the progress of the race has been determined by geographic conditions, and she should understand how such conditions affect the industries of her immediate locality and of the country at large, so that she can explain why the people in Dakota raise wheat, those in Montana raise live stock, and those in western Pennsylvania engage in mining and the manufacture of iron and steel. She should also be able to give the geographical reasons for the location and size of the chief cities of the world, such as London, New York, Paris, Calcutta and Hamburg, and to show why the great lines of transportation have been located where they are. Above all, she should be able to give the reasons for the customs, manner of life and forms of government in the leading nations of the world.


OUTLINES OF MOUNTAINS

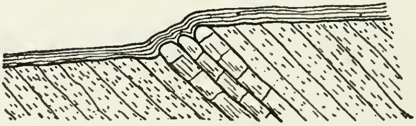
(b) Elements of Natural Science. The intimate relation which geography sustains to physics, botany, zoölogy, geology, meteorology and chemistry makes it imperative that the teacher have a knowledge of at least the elements of these sciences, for without this knowledge she cannot make the application of the fundamental principles and laws of geography, nor will she be able to work out or understand these principles. A good text-book in each of these subjects should form a part of every teacher's library.

(c) Descriptive Power. Much of the pupil's knowledge of geography must be obtained through descriptions, and the teacher should be able to give vivid and accurate descriptions of people and places. If she does not possess this power naturally, she can acquire it by study and by reading books of travel. She should also be able to use the blackboard. McMurry says, "The teacher who cannot use the blackboard freely for illustrative purposes is shorn of half her strength at the start." This does not mean that the teacher needs to be an artist, but that she must be able to make simple sketches similar to those shown in the illustrations and, to do this with ease and freedom, so she can use the crayon at the same time that she is giving verbal descriptions. The illustrations of the outlines of mountains, a river system and the formation of rapids and cataracts show what any teacher ought to be able to do in the way of blackboard illustrations in geography.



A RIVER SYSTEM

(d) THE TEXT-BOOK. The teacher must know the text-book from a teacher's point of view. No text in geography can be followed absolutely, and many texts are unsuitable because of their plan and subject-matter. The primary geographies are usually the most difficult. All of the older books attempt to give a systematic treatment of the subject; therefore, their contents comprise a mere skeleton of maps and facts. Some of the more recent books are a great improvement upon the older ones, but even the authors and publishers of these have been too fearful of breaking entirely away from old traditions to produce books best suited in all respects to the needs of the children. Nearly all text-books contain too many petty details and fail to give sufficient space to the great facts of geography.



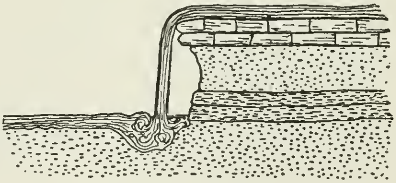
THE FORMATION OF RAPIDS

Concerning these works, one of our leading authorities says:

> "The crucial test of the value of the text-book in geography is not so much what it contains as what it doesn't contain. A text in which the fundamental principles have been scuttled and sunk in a sea of irrelevant details may have a cyclopedic value, but it is not worth much as an educative factor. * * * The text of the ordinary advanced geography contains about fifteen hundred geographical names and the maps about five times as many in addition. As a matter of fact, the average man or woman of intelligence is rarely familiar with more than three or four hundred geographic names, even in a very general way."[1]

It is, therefore, important that the teacher get a clear conception of the scope and plan of the text-book before it is introduced into the class. Such a conception can be obtained only through a comprehensive study of the book from beginning to end. It is not enough to keep one or two lessons ahead of the class; the teacher who attempts to use any text-book in geography in this way is sure to meet failure.

(e) LITERATURE. Many localities are rich in legends, historical incidents and literary allusions. The teacher should know where to find these, and how to use them to the best advantage. A method for collecting and arranging such selections is given in Section 21.



THE FORMATION OF A CATARACT

(f) KNOWLEDGE OF THE WORK AS A WHOLE. The teacher must be able to see the end from the beginning, otherwise she cannot plan wisely; even in those schools provided with complete courses of study this is necessary. The teacher must determine what she will accomplish each week and month; what points need special emphasis, and what can be passed over lightly or omitted altogether. With a definite plan of this kind before her, she may so direct the study of the pupils as to keep them interested and at the same time prevent waste of effort.

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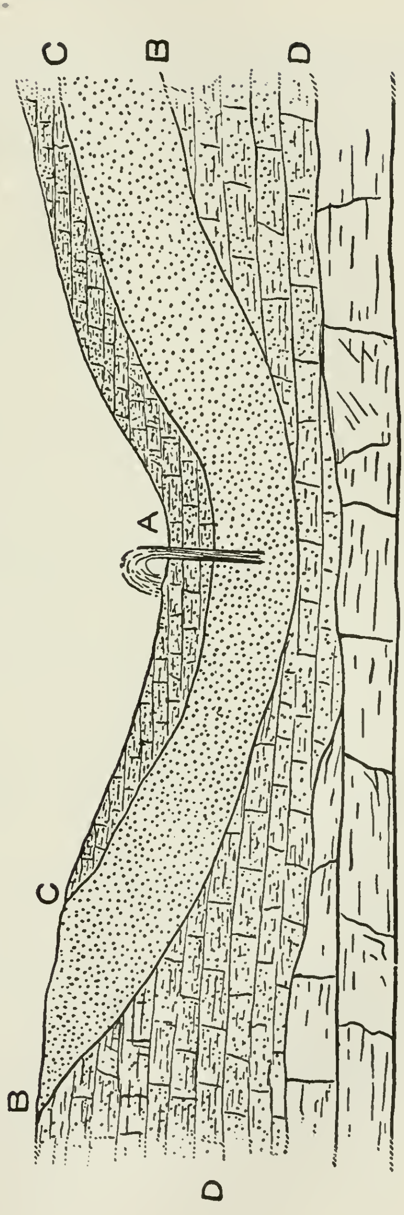
[1] Redway: *New Basis of Geography.*

6. Conditions. In many schools pupils begin to study geography from the text-book when they enter the fourth grade. In most cases the pupils would probably acquire a better knowledge of the subject if the study of the book were deferred until the middle of the fourth year, or the beginning of the fifth; but teachers have to take conditions as they find them. If pupils have received proper training, when they enter the fourth grade they should know the names and uses of the plants and animals common to their locality; something about the migration of birds, and be able to recognize the most common birds; the occupations of the neighborhood, and the necessity for them; the coming and going of the seasons; the direction of the winds; the difference in the length of day and night in summer and winter; something about erosion and the transportation of eroded materials, and they should recognize the home as the center of life. They should also have made a study of the schoolgrounds and the immediate surroundings. If the class is strong, this study should have been extended to include the school district; if the school is in a village, the study should have included the village.

The pupils should know what a map is, from drawing maps of the localities studied, and they should have learned the meaning and use of a scale. They have probably also become acquainted with the chief articles of food and clothing Unless they have had at least this preparation, they are not in a condition to begin the study of any text-book in geography, and the teacher will need to do considerable preliminary work.

Whatever the previous preparation of the pupils may have been, the text-book should not be wholly set aside, if pupils have been provided with copies. Many parents are not easily convinced that their children are learning anything of value unless they use books. Moreover, if the pupils have brought their books to school, they will be sadly disappointed if not allowed to use them; therefore, the teacher is under the necessity of making the best use of the book that she can.

7. Home Geography. Regardless of the introduction of the text-book, the study of home geography should be continued. The importance of this phase of geography work is too often underestimated. It should have a regular place on the daily program and be given its full share of time. Home geography lays the foundation for the study of foreign geography, because through it, and through it alone, can pupils obtain concrete illustrations of ideas which enter into their concepts of geographical forms. The oral lessons should be continued and elaborated, provided the



AN ARTESIAN WELL

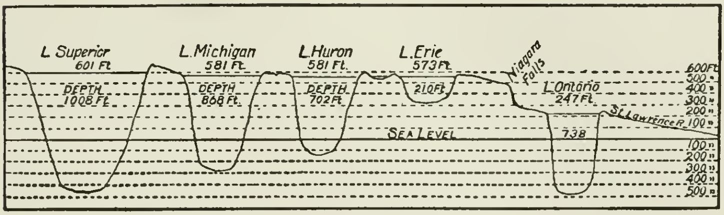
BC represents a layer of gravel or porous earth saturated with water. A and D represent layers through which the water cannot pass. When the well is bored at A, the pressure of the water from the higher level in BC forces it up through the pipe and forms a flowing well.

pupils have a knowledge of the subjects named in Section 6. A study of the features of the landscape forms a good introduction to the work of the fourth grade. In almost every locality springs, brooks or rivers, swamps and prairies, or hills, valleys and meadows can be found. The leading features of the surface of the locality can be used to excellent advantage and should always be drawn upon to furnish concrete illustrations of descriptions found in the text-book. The same use should be made of plants and animals, the most important crops, the chief industries, and the lines of transportation of the locality.

The study of a railroad naturally leads to the consideration of some of the towns and cities through which it passes, and in this way the pupils begin to extend their knowledge of the locality. A brook or river has almost limitless possibilities. The constant changing of the banks, the character of the bed, where the current is swift and where it is slow, the deposit of sediment in some places, and the wearing away of the earth in others, afford excellent illustrations of erosion and the formation of alluvial or flood plains. By tracing the divides and slopes of a small stream, the children soon learn the area drained by it, and thus get a concrete illustration of its basin, which needs only to be enlarged by their imagination to apply to a river basin. Mountains, hills, valleys, prairies and other natural features can be studied in the same way.

The occupations of the locality are equally helpful. They are types of great classes of industry that are found over the country and over the world. Thus home geography serves a double purpose; it causes the pupil to become acquainted with the geographical facts of his locality and also brings him in contact with types of great geographical facts which he follows throughout the study of the subject.

The connection of these lessons in home geography with the text-book is easily made by having the pupils read from their geographies descriptions of objects like those they are studying, then asking them to discover in what respects the description must be modified to fit the object to which they wish to apply it. By such exercises the pupils soon learn that the main facts in the printed description will apply to local objects, but that details are different for each hill, valley, river and other object studied. In this way the class becomes acquainted with the broad application of the general truths of geography.



ALTITUDES AND DEPTHS OF THE GREAT LAKES

8. Study of the World. As soon as the pupils become acquainted with their text-book and form some conception of what geography is, they should be taught something about the world as a whole. The form of the earth is best taught by the use of a small globe or an orange. At this stage a number of small globes which the pupils can handle are much more useful than a large, mounted globe. The conception of the rotundity of the earth is difficult for children; even some adults never get a clear idea of this fact. If the earth is round, why does it always look flat or mountainous? is a question constantly recurring in the child's mind. With a small globe or an orange this difficulty can in a measure be explained away. Have the pupils take a piece of paper large enough to cover at least half the globe, and in the center of this cut a round hole about one-half inch in diameter; then lay the paper on the globe so that the part in which the hole was made touches the surface. How does the part seen through the paper look? Why? Explain that the portion of the globe seen through the hole in the paper is relatively much larger than any portion of the earth that we can see at one time. Some of the simple proofs of the earth's rotundity, especially that of seeing ships enter and leave the harbor, should also be explained. Hemispheres, the division of the earth's surface into land and water, the names of the continents and oceans, their relative position and general forms should also be taken up in connection with this first study of the world as a whole. Only the most striking general features should be touched upon, but these should be given sufficient attention to fix them firmly in the minds of the pupils.

9. Selection of Topics. After the pupils are started in their work, the teacher should exercise her best judgment in the selection of topics, whatever the plan of the book that she has to teach. Two pitfalls should be avoided: attempting to teach a multiplicity of details which to the pupil form no part of the general whole and which obstruct or wholly prevent his comprehending the general effect, and attempting to lead pupils into special lines of observation which are of interest to the teacher, but from their nature cannot interest pupils of immature minds. Children can grasp simple wholes, even when they are large, but they cannot analyze complex subjects. The teacher should always bear this in mind in the selection of her topics. Another guiding principle is, "The number of classes of geographical facts is not great, while the number of individuals in each class is legion." The selection of a few important representative class topics is therefore of much greater value than the study of any amount of detail.

The following topics will be found suggestive: (1) Those topics which are fundamental, and run through all the grades; as climate, erosion, forms of water, relation of industries to location, commerce and government. (2) Topics of interest in the immediate locality; as the hills, streams and valleys, the leading industry of the district or town, the courthouse, the city or village hall, a railway station. (3) Special topics: places of historic interest, such as Gettysburg, Lexington and Concord; places of remarkable scenic beauty or grandeur, as Niagara Falls, Yellowstone Park, Yosemite Valley and Glacier National Park.

By confining the study to a few significant topics which have a bearing upon the work of the entire course, enough time can be devoted to these topics to make them real and lifelike. The teacher must remember that mere memorizing of facts is not knowledge. A fact in geography has no value to the pupil unless it has some significance for him; that is, unless it points to something that he knows from experience. The topics selected for the class beginning the use of the text-book should be simple and should bear a close relation to some of the home geography topics referred to in Sections 6 and 7. Some of the topics should also correlate with the history stories studied at this time. Good examples of such topics will be found in the Type Studies.

10. Study of a State. Some of the most successful teachers of geography advocate devoting at least the first half of the fifth grade to the study of the state in which the school is located. These teachers claim, and with good reasons, that the state is a unit large enough to embody many of the principles which the children are becoming conscious of in their study of home geography, and to show the interrelation and application of these principles to life; and that the study of the state gives the child an understanding of the meaning of geography which he will not gain if he passes immediately from home geography to the larger outside world. The state is also typical of a country, and when the child obtains an idea of the state, as a political unit, this idea needs but little modification to adapt it to a country. Most courses of study recognize the importance to the pupil of a knowledge of the state in which he lives, and make ample provision for state geography.

In the fifth grade extent, outline, and large, graphic features should be studied. These should include the chief mountain ranges, principal rivers and other bodies of water, prairies, plains and large valleys, if they are found, and the location and extent of the natural resources.

The leading industries and occupations and the chief centers of trade and manufacture should also receive attention. The study of these will naturally lead to the study of transportation. The leading lines of railway should be traced upon the map, and the most important railway centers located. Similar lessons should be given on navigable rivers and canals, if any are found within the state.

In the last part of the year a few lessons on the government of the state should be given. The capital should be located; the plan for electing the state officers, and the general duties of some of the most prominent of these officers should be discussed. The election of legislators and the making of laws should be touched upon, as should the courts and their duties. (See Volume V, page 312.)

The work should be upon the same plan as that used in the study of a country, then when the class changes from one unit to the other there will be no occasion for confusion.

11. Oral Instruction. Text-books are but guides in the study of any subject, and without exception they should be supplemented by oral instruction. Pupils in the intermediate grades need a great deal of oral instruction, because they have not arrived at that stage of maturity which enables them to interpret fully what they read. Teachers are often deceived by the fact that pupils read a book readily. It does not follow that they comprehend the meaning of what they read. Whether or not they are able to do this can easily be determined by asking them a few pointed questions upon the subject-matter. An elementary geography presents many difficulties to the child. It contains a large number of new words, its style is different from that of other books that he has read, and its arrangement is often such that he is unable to see in it any plan or purpose. If he is to master this book he must receive such instruction as is necessary to enable him to overcome these difficulties.

Another reason for oral instruction in geography at this time is that these lessons should contribute to the development of the pupil's memory, imagination and reason. Pupils at this age grasp more clearly and remember much better such facts as are presented to them in oral lessons. One reason for this is that the teacher can enter much more fully into the description of places than it is possible for the text-book to do. These vivid word pictures, supplemented by suitable blackboard sketches or other illustrations, give the pupils a clear mental picture of the object described. The oral description also holds the pupil's attention much more closely than the printed page.

Again, oral instruction affords opportunity of presenting problems for the pupil to solve which the text-book cannot contain. In the study of the lumber industry, for instance, the pupil should be given time to solve such problems as how the lumbermen get the logs to the mills and how the lumber gets to market. The Southern farmer has a large crop of cotton. What steps must be taken to exchange his crop for money? These and similar questions constantly arise in the discussion of geography topics. The solution of some of the problems found in such questions will require but a moment, while that of others will require so much time that the answers must be deferred until a future recitation. By injecting such problems into the recitation, the pupils are thrown upon their own experience; arriving at the solution not only strengthens their reasoning powers, but it also helps them to make a vital connection between the geography lessons and their daily lives. These exercises also furnish good material for the language class.

The amount of oral instruction which is directly related to the lessons in the text-book will, of course, depend upon the pupils' preparation for the book before it is introduced. Pupils who have done the work outlined in Sections 6 and 7 will require less than those who have not had such preparation. During the first year that the book is used considerable oral instruction will be necessary, such reference to the text being made as will enable the pupils to connect the lessons with the book. With each succeeding year the time spent in studying the text will increase, and that devoted to oral instruction will decrease proportionately, since pupils are constantly growing in their power to master books. However, the successful teacher of geography will never cease to supplement the text with oral instruction whenever she feels that this work is needed.

PREPARATION. Oral instruction in geography requires extensive and thorough preparation on the part of the teacher. She must have such a knowledge of the subject to be presented as will enable her to make it real and lifelike to the pupils. But the teacher should be a keen and close observer. Geography at first hand is written not in text-books and works of travel, but in the great book of nature, and she who would be successful must read this book and develop a love for its teachings.

Cautions. (1) Geography deals with a large number of subjects which are also treated in other sciences, such as botany, geology and meteorology. In no subject is there greater danger of digression from the topic at hand. Therefore, remember that geography treats its topics from a *geographical* point of view; that other sciences treat them from a different point of view. *Stick to the subject*, and avoid confusing the pupils by the introduction of irrelevant matter and unnecessary details.

(2) Do not attempt to cover too much ground, but weave a number of interesting details around a few central topics.

(3) Plan the lesson systematically so that the topics presented for discussion will follow the order in which they would naturally be observed.

(4) Do not talk too much in oral work. Ask a few pointed questions which will lead the pupils to observe and to think. When they have learned what they can, supplement their efforts with such clear, concise descriptions and explanations as are neccessary.

12. Excursions. Excursions are of two classes—real and imaginary. Those of the first class consist of trips that the class and teacher make to nearby places. Those of the second class consist of imaginary journeys that the pupils make to distant cities, other parts of the country and foreign lands.

(*a*) REAL EXCURSIONS. Excursions afford opportunity for the study of types, and should constitute a part of the work in home geography. The excursions should be planned with reference to available places and to the season of the year. During the winter, where the climate is severe, they should be confined to objects within doors, except on rare occasions. In the South excursions to outdoor points can be made throughout the year. The plan for the term or year should also give as much variety as the pupils can use to advantage, such as the study of the features of the landscape in the neighborhood, of some of the different manufactories and one or more stores. Local conditions vary to such an extent that specific selections cannot be given.

The excursions should be carefully planned. If possible, the teacher should visit each place beforehand, and if the excursion is to a manufactory or store or any other business with which the visit will possibly interfere, permission to visit the place should be obtained from the proprietor or manager. In her visit to such a place the teacher should, if possible, go over the ground with the foreman or someone who is thoroughly familiar with the different departments and their relation to each other. At this time she should determine what she wishes the pupils to study and then plan her trip through the building so as to have the class see the various departments in their proper order and relation. Unless this precaution is taken, at least one-third of the value that should be obtained from the trip will be lost.

The pupils should be told one or two days before the excursion is to take place what is to be done, and they should obtain the consent of their parents to go on the trip. If the excursion is to a factory or any place where machinery is in operation, only a small number of pupils should be taken, unless the teacher can have a number of assistants from the older pupils or patrons who will take charge of the children in small groups; otherwise, serious accidents are liable to happen. The pupils should be kept together, and their attention should be directed to what the teacher wishes to have them see. Unless this is done, very much will be lost because of the confusion arising from the novelty of the place and the many things which tend to distract the children's attention. With classes in the lower intermediate grade, attention should be directed only to the most important features of the work. With older classes such details can be added as they will understand. It is well to have the children ask the proprietor, or foreman, questions; or for the teacher to ask the questions in the presence of the class, so they can hear the explanations The excursion should furnish material for two or three lessons, and the work should be completed by having the pupils give first a complete and connected oral account of what they have seen, and then a written account of the same. Under proper guidance pupils become very enthusiastic over this work.

If a house or other building is being erected in the neighborhood, encourage the children to watch the progress of construction. Inquire after the source of all the material that goes with the building, and trace each kind of material back, if possible, to its original source—the farm, the forest, the mine and the quarry.

Excursions are attended by certain difficulties which the teacher should foresee and overcome. These are the difficulty of controlling children out of doors or in strange places, the tendency of some of the children to give their attention to trivial matters and those things which are in no wise connected with the point in hand, and the opposition which some parents raise to the proposed scheme. Such opposition is usually genuine on the part of the parents who entirely misconceive the purpose of the trip and do not understand how pupils can learn unless they are in school studying books. A visit to the parents and an explanation of the purpose and work will usually remove their objections. One or two talks with the pupils before the first excursion, giving them an understanding of what is expected of them, will usually prevent in a great measure the other difficulties.

(b) IMAGINARY EXCURSIONS. This method of study affords considerable variety in the geography work and is of particular interest to pupils in the fifth and sixth grades. Such excursions should begin with imaginary journeys to places near by, which some of the pupils may have visited. If the school is in the country, an imaginary excursion to the town where the community transacts most of its business will make a suitable beginning. Another can be taken to the county seat, and another to the nearest large city or the large city with which the community is most closely connected through its business relations. This work can, of course, be extended to various parts of the United States and to foreign countries. (See *A Trip Over the Dixie High way*, page 449.) Not all study in geography should be taken up in this way, but the trips should be planned whenever they will serve the purpose of a good review or lend additional interest to the work which the class is doing.

Imaginary excursions should be planned with as great care as real excursions, and they should be made as real as possible. The distance to the point to be visited, the best means of travel, the most important objects to be seen, the habits and customs of the people, the various industries in which they are engaged and other matters of interest should be carefully considered. Books of travel, text-books, and especially the elaborate circulars issued by the leading railway and steamship companies, should be consulted by both teacher and pupils in the preparation for these journeys. Great assistance can be derived from pictures. The school that has a stereopticon with a valuable collection of slides, is fortunate, but the stereoscope, and pictures without the use of a lens, add interest and give valuable information.

(c) LETTER EXCURSIONS. Correspondence between pupils in the geography class of one school with those in a similar class in another school far distant can sometimes be arranged, and it adds very much to the value and interest of the work.

Any teacher desiring to introduce such a feature into the geography work, especially in connection with these excursions, should write the superintendent or principal of the school with which she desires to institute correspondence. If the plan is accepted, then certain pupils should be designated to correspond with those that may be named by the teacher in charge of the class in the other school. The pupils should describe such objects and conditions in their locality as they think will be of interest to their correspondents, and the letters which they receive will contain similar information. The teacher should have oversight of this work to the extent of suggesting the information that should be given and requested. These letters become the property of the class and are read in the recitation by those receiving them, so that all can have the benefit of the correspondence. Different pupils can be appointed to conduct the work from month to month, as long as it is desired to continue the plan.

13. Maps. The first idea that the term *map* usually conveys to one is a conventionalized representation of the whole or a portion of the earth's surface. The map may include only the schoolgrounds or it may embrace the whole world. Between these two extremes there are unlimited gradations. The school work in geography usually requires the pupil to study three classes of maps—political, physical and relief.

(a) POLITICAL MAPS. The first maps which the pupil studies are those from which he gets his first conception of what a map is. They contain contour, direction, and whatever other facts it is considered desirable to place upon them. If the first map is of the school grounds, those following it can be extended so as to include the locality adjoining these grounds; then they may take in the township and even the county; but such map work should not be carried too far. If the school is in a village, a map of the village which shows the principal streets and any public park or other prominent features may be attempted, but maps of large towns and cities should be avoided at this time. In case maps of the county are studied, they should contain only the chief features, such as the principal towns, most important highways and leading railroad lines.

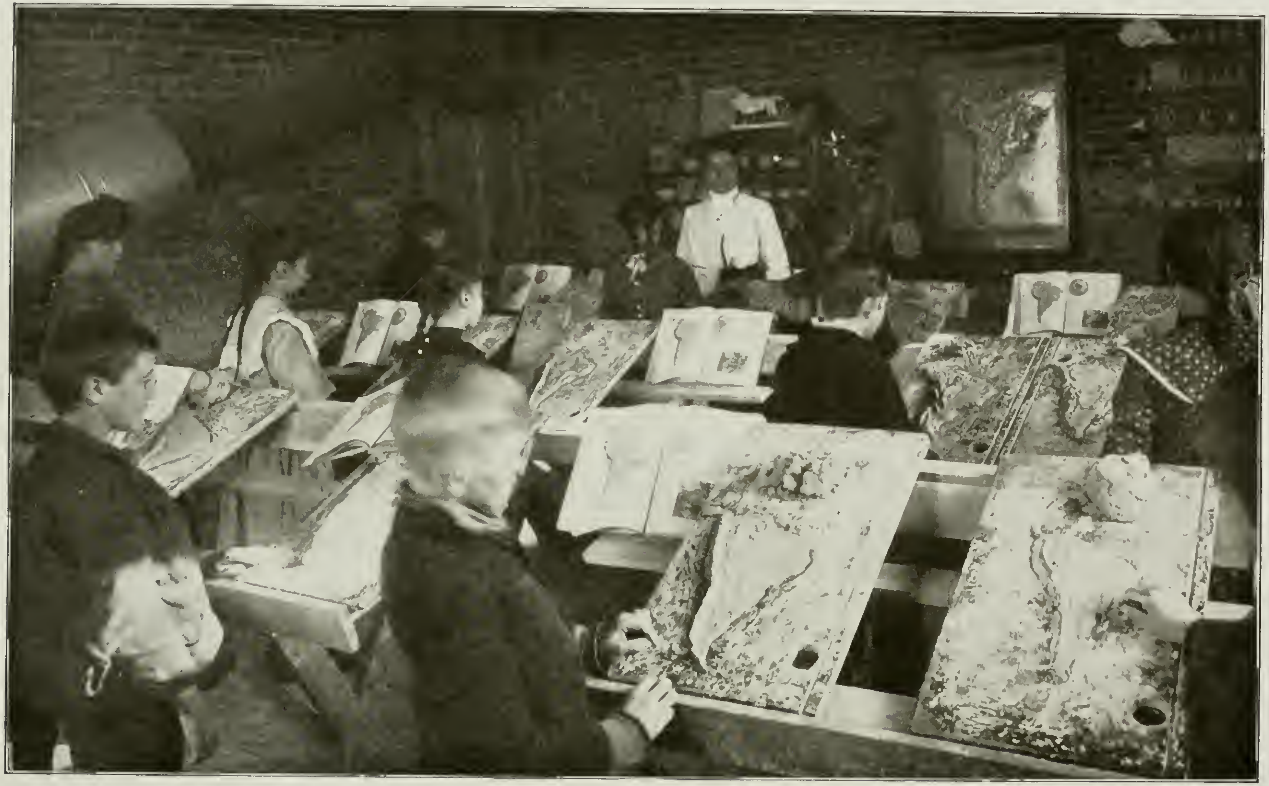
When the pupils make the transition from home geography to that of the world they begin to study maps representing continents and countries, and a set of wall maps is indispensable. These maps should be simple and clear, bringing out only the most important features.

(b) PHYSICAL MAPS. Physical maps represent the surface of the country in relief. There are two kinds of maps used for this purpose: those which represent the various altitudes by difference in color, and those showing relief forms by such shading as will represent highlands and lowlands. Each of these classes of relief maps has its ardent advocates, and the best geographers seem to be about equally divided as to their merits. For the younger children especially, a shaded map which shows highlands and lowlands in relief form is more desirable than one showing these forms by difference in color, because the children are unable to image the forms represented in this way. It is also quite probable that clearer ideas of relief are obtained by the use of this class of maps throughout the grades in the elementary schools, notwithstanding the fact that some of our best textbooks use the other form.

(c) RELIEF MAPS. True relief maps are really models of the region represented so as to show the surface approximately as it is found. Such maps are of great value in giving pupils a conception of the general structure of a continent or country, but in order that they may accomplish this purpose the pupils need at the beginning to have a concrete illustration of what such maps represent. This illustration is easily obtained by having the pupils, with the teacher, model a region near the schoolhouse. If a small stream is in the vicinity, a portion or the whole of the basin drained by this stream can thus be modeled. A hill, a railway cut and a road passing over a hill and through a valley also afford good illustrations of regions that can be used to advantage. If the pupils begin construction of relief maps with something of this kind, they see at once what the map represents, and when they model a continent the form is much more real to them.

Various materials can be used in making relief maps, such as sand, putty, and papier-mache. If the schoolroom contains a sand table, or if proper molding boards and a quantity of fine sand can be obtained, perhaps this is the most convenient and least expensive material that can be employed. Its manipulation, however, requires more skill than that of putty or papier-mache. The papier-mache is probably the most available material, because it can be manufactured on the spot at little or no expense. Take a quantity of old newspapers, tear them into small pieces and soak them in water into which a solution of gum arabic or mucilage has been poured, the proportions being about a tablespoonful of mucilage to a gallon of water. After the paper has soaked several hours, it can be made into pulp by working it with the hands or stirring it with some implement until it is thoroughy macerated. When needed for use it should be taken from the pail in small quantities and have all of the surplus water squeezed out. Newspapers thus treated form a very plastic material, having a gray color. This can be easily worked, and the mucilage causes the pulp to harden and become firm as it dries.

Whatever material is employed, the construction of the map should be planned before the work is begun. Each pupil should draw upon the molding board, or other surface upon which the map is to be made, an outline of the continent or country. This will enable him to bring his map into proper form as he constructs it. Most of these maps are too complex to admit of completion at one period; hence, the work should proceed in sections from day to day. The work is most easily done by modeling the principal mountain ranges, then arranging the coastal plains and interior lowlands. Large forms are most easily modeled, so it is evident the continents do not present so much difficulty as a country or state.



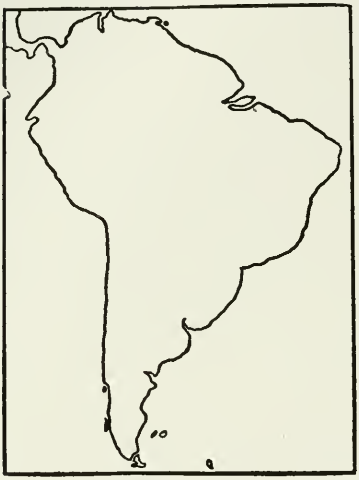
From a photograph

CONSTRUCTING RELIEF MAPS OF SOUTH AMERICA

(d) Map Reading. The teacher should be able to understand all the markings on the map and margin. The children must learn direction; the meaning of the scale and how the scale is used to determine distance; the meaning of parallels and meridians; the irregular coast line with its projections and indentations; the location of the mountains, lowlands, lakes, rivers, cities and other prominent features; and their attention should be called to the various markings that represent these different features until they become thoroughly familiar with them. The pupils of the seventh grade should also learn to read the margin of the map, and from this find the latitude and longitude of places.

It is difficult for children to form correct mental pictures of the objects which these markings represent. The use of pictures in connection with the study of the map affords one of the best means for connecting the map with what it represents. If the class is studying the map of Colorado, for instance, views of Pike's Peak, Cheyenne Canyon, the Garden of the Gods, Royal Gorge, and general views of the mountains, show what the marks indicating mountains actually represent. Making relief maps of a locality is another excellent way to help pupils make the connection between the map and the object. Both plane and relief maps of the locality should be constructed, and the teacher should continue supplemental instruction until the features represented upon the map become realities. Philadelphia should not be a mere dot, but a great city, throbbing with life and containing many spots of historic interest. Pike's Peak should be a great mountain, lifting its summit above the clouds and having its sides covered with loose, irregular fragments of rock. The black line crossing the United States from north to south should be the great river, with its changing banks bordered by fertile fields and bearing upon its bosom the commerce of great states. Pupils will not see these things without help, and any device that will enable them to picture what the map represents, is good.

(e) Map Drawing. Map drawing is one means of expression; when properly used the art gives the pupil additional power and enables him in a few minutes to give a better idea of what he knows about a country or other locality than will any amount of questioning. Map drawing is entirely distinct from map modeling. While in a few instances highly finished maps which require the expenditure of a great deal of time may be of sufficient value to warrant their construction by pupils who have a special aptitude for that kind of work, in general they should not be attempted. The simple outline map which can be produced rapidly and with a few strokes with the pencil or crayon, is by far the more valuable for class work. With a little practice most pupils become quite skilful in the construction of such maps. Occasionally text-books contain elaborate systems of construction lines for drawing maps. These should be avoided. The time required for drawing the plan is often greater than that necessary for drawing the map. The only construction lines of value in case any are needed, are those representing the parallels and meridians. These the pupils can soon learn to draw, but it is usually better to have them study the map carefully and then draw without guiding lines of any sort. In this work the chief aim is not perfection in outline but the acquisition of ability to express form and location.

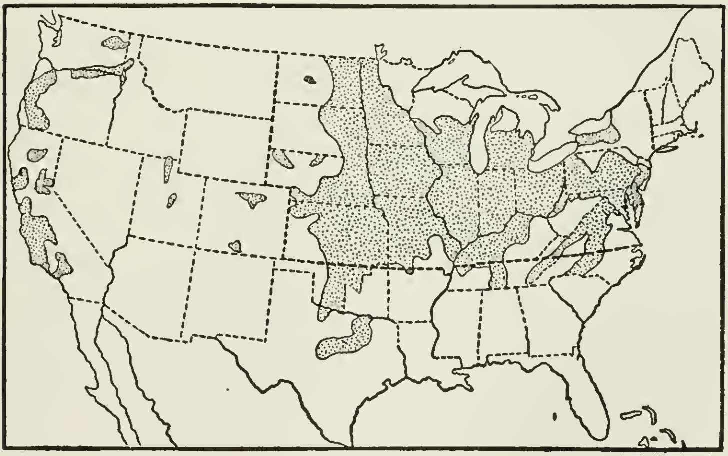


OUTLINE MAP

Printed outline maps are now furnished by a number of publishing houses at a nominal cost, and these can be used to good advantage in making progressive maps, both in geography and history. The outline is accurate and the time necessary for making this is saved. The maps can be filled in as the lessons proceed. These maps are also useful in locating the various industries in the country, as lumbering, the raising of wheat, the raising of cotton, and coal mining. Usually it is best to have the map represent only a single industry; by this plan the fact studied is strongly emphasized.

OUTLINE MAP OF CALIFORNIA

(f) MAP STUDY. Pupils should be trained in the study of maps until they have formed the map habit. By this is meant the habit of looking up on the map the location, relative area, distance, and other geographical data of places about which they read or study, unless they already know these facts. It is of great advantage to one to be able to bring into mind the map of any country or other region at will. This is a kind of knowledge that the business man finds of use in commerce, and another kind is that which is closely related to it, namely, the ability to recall along



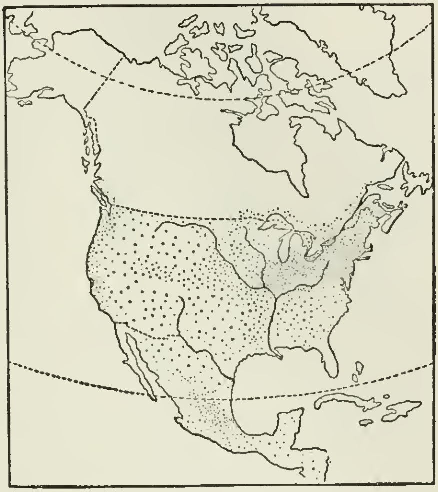
WHEAT REGIONS OF THE UNITED STATES

with the map the physical and political conditions of the region which it represents. The map as a representation of the location of a country also represents its surface, climatic conditions, products and people. When all of these facts are associated with the map they make it mean vastly more than a patch of color, and each added fact helps to fix the map in mind.

The map habit is formed only by persistent practice. Have a map where it can easily be consulted in the geography recitation and require pupils to point out upon it the places named as they recite. Require pupils also to look up on the map all places mentioned in the reading lessons, history and other subjects. Require occasional map sketching and in every way possible lead the pupils to realize the value of maps, but do not give map exercises which require the mere searching out of the location of places and tracing of boundaries of political divisions. These facts should be learned incidentally; exercises of this variety are lacking in interest and are thoroughly distasteful to the pupils. An excellent exercise is to have one of the pupils read a few important news items from a daily or weekly paper and let the class locate the places named without referring to the map. After the last item has been read, the maps can be consulted. An occasional exercise of this sort is of far greater value than any number of stilted map lessons.

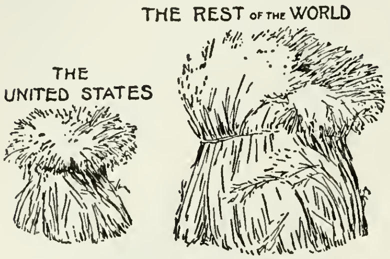
Caution. Do not attempt too much. Map location forms only a small part of the work in geography, but it should yield clear, definite and permanent results. Children should know the essential map locations, and know them well, such as the location of Boston, New York, Philadelphia, Chicago, the Mississippi River, the Rocky Mountains, the Mediterranean Sea and the Suez Canal. They should know the location of the different states in the Union, and of the leading countries, bodies of water, and cities of the world. In learning these facts they should learn how to find upon the map the location of any other place it becomes necessary for them to know.

(g) GLOBES. Every school should have a globe. The most useful globe is a small, inexpensive one which can be handled with ease and safety by the pupils. Elaborate pieces of apparatus of this kind usually contain so much that they confuse the younger children. Only a few things should be attempted with the globe in elementary geography. These are the study of the form of the earth, of the relative positions of the continents and oceans, the cause of day and night, as shown by the rotation of the earth, and an understanding of the meaning of parallels and meridians and their position. Most of these facts the pupils will discover for themselves, provided their attention is directed to them by the teacher and they are allowed to handle the globe in obtaining answers to the questions. Many teachers make a mistake in attempting to solve problems with the globe which are entirely too difficult for elementary pupils.



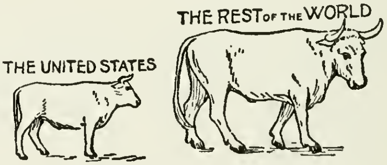
DENSITY OF POPULATION

14. Graphic Illustrations. Statistical data when expressed in figures mean but very little to the average adult and practically nothing to children. The comparative extent and value of our great industries, the value of our exports and imports, also of our trade with the leading commercial nations and the relative position of the United States among the leading nations in area, population, agriculture, manufacture, commerce and other important matters, are facts that pupils should learn during their study of elementary geography, but some other means than the use of figures must be employed to impress these facts upon their minds. If we say that the wheat crop of the United States for 1915 was 1,001,000,000 bushels, the statement conveys no definite idea to the class, but if we tell them that were the entire wheat crop of 1915 collected into one huge pile, the wheat would fill a trench 141 miles long, extending from Albany to New York, and 35 feet wide and 35 feet deep, we have given them a standard of measure which they can at least partially comprehend. If we go further and illustrate the statement by drawing a map showing the location of the cities named and the length of the trench extending from one to the other, the size of the wheat crop is brought before the pupils still more forcibly, and most of them will remember the fact thus presented.


THE REST OF THE WORLD
THE UNITED STATES

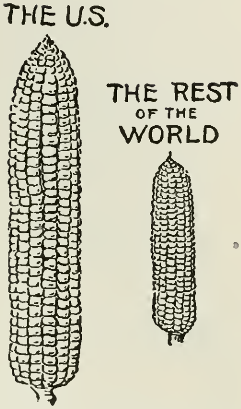
THE WORLD'S WHEAT CROP

Another good illustration is found in the meat packing industry. The number of hogs slaughtered in the United States annually is about 31,000,000. They have a gross weight of 930,000,000 pounds and yield a net weight of dressed meat of nearly 465,000,000 pounds. Could all these hogs be combined into one huge animal, it would have a length of 1570 feet, or it would extend nearly across three city blocks, while its height, 785 feet, would exceed that of the tallest building in the United States by more than 160 feet. The quantity of the various products can be illustrated in a similar manner; for instance, the sausage made, if formed into a continuous chain, would make a chain that would extend more than six times around the earth. Draw an outline of the globe and run this chain

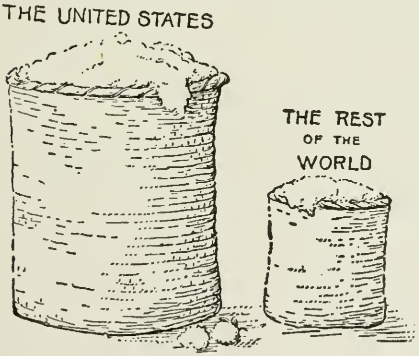

THE UNITED STATES
THE REST OF THE WORLD

THE WORLD'S MEAT SUPPLY

around it six times, and the children will never forget the illustration.


THE U.S.
THE REST OF THE WORLD

THE WORLD'S CORN CROP

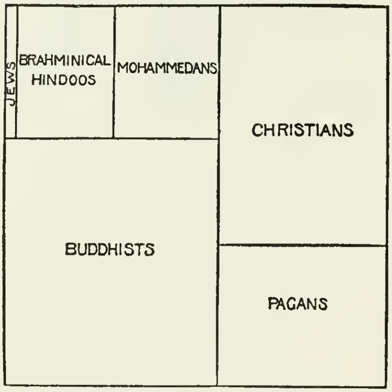

THE UNITED STATES
THE REST OF THE WORLD

THE WORLD'S COTTON CROP

The ingenious teacher will be on the watch for devices for illustrating statistical matter. The *Scientific American*, from which the accompanying comparative illustrations are taken, publications of the Census Bureau and articles in periodicals often contain valuable suggestions for devices of the kind just named. The teacher should also have at hand a number of simple, conventional devices which are easily made. By means of these the comparative areas of continents and countries, length of rivers, population of cities and many other important and interesting facts can be graphically represented. The circle, the rectangle, the line and the pyramid are the simplest and most valuable devices, and any one of them can be used with the older classes. However, pictures similar to those described in the illustrations above are more valuable for the younger classes. The use of colored crayons also helps to make the impression more vivid; for instance, if the teacher wishes to illustrate the relative numbers of the human race embraced in the three great forms of religion—paganism, Mohammedanism and Christianity—a circle or square representing the entire population of the world, divided into three parts which will illustrate the relative proportions and having each division of a different color, brings out the fact very clearly.

15. Pictures. Present methods of illustrating books and periodicals make pictures so numerous and so inexpensive that every school can have its picture cabinet for illustrating the geography and history lessons. It is also to the advantage of the teacher to have a collection of her own which she can use to supplement the school collection.

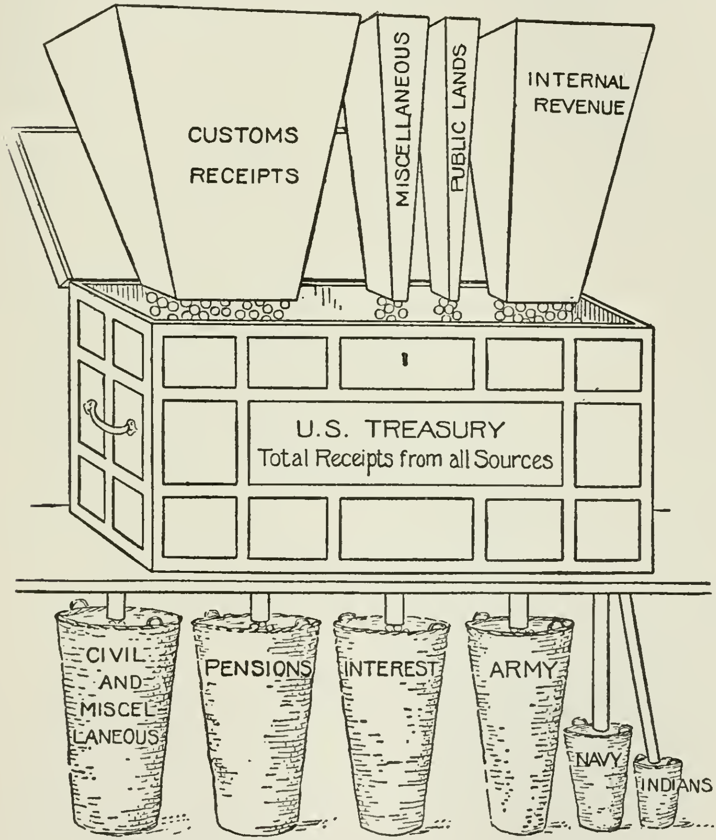
(a) SELECTION. Photographs, engravings and plain and colored halftones are the styles of pictures most easily obtainable. Of all these, the plain halftone used in illustrating the best magazines and textbooks is the most valuable, because it is the most easily obtained and the least expensive. Hundreds of such pictures can be clipped from periodicals without any expense. Photographs are very desirable, and when one can afford them a limited number adds much to the interest and value of the collection. Views with the stereoscope are especially useful, because the instrument enables the pupils to obtain a good idea of the relief forms presented in the pictures. This feature can also be brought out, though not as well, by using a good magnifying glass, such as a reading glass, with ordinary halftones.



GREAT RELIGIONS OF THE WORLD

Pictures should be selected with great care. Those designed for the lower grades should be simple and contain only strong general features. Complex views should not be used in these grades. The collection should contain such a variety of views as will represent coast lines, strong physiographic features and the activities connected with great industries. Both pupils and teachers should aid in making the school collection. Colored views should be selected with caution. Cheap colored pictures are not true to life, and should in all cases be avoided. In general, halftones are more satisfactory than cheap colored views, and the bulk of the collection will consist of these and of photographs.

(b) Mounting and Filing. Pictures should be mounted in some manner that will preserve them. One of the most convenient devices is to use heavy manila paper, cutting it



RECEIPTS AND EXPENDITURES OF THE UNITED STATES GOVERNMENT
(In normal times, undisturbed by wars.)

so that there will be a margin of at least one inch around the picture. The title, if not printed on the picture, should be written under it, and whatever description needs to accompany the view should be written upon the back of the mount.

An inexpensive and convenient device for filing consists of large envelopes. The pictures can be arranged by countries or continents, as desired, and the title of the group may be written upon the back of the envelope. This arrangement enables one to find at once whatever pictures the cabinet contains bearing upon the subject in hand. With proper instructions as to care in handling and replacing the pictures in the envelopes from which they are taken, pupils should be allowed free access to the picture cabinet.

(c) USES. Some teachers secure much better results from the study of pictures than others, because they know better how to use them. Failures arise from unwise selection, from lack on the part of the teacher to study the picture and decide the points to which the attention of the class should be called, and from presenting too many pictures at a time. If you do not have a stereoscope or other lens through which the pictures can be viewed, the stereoscopic effect can be produced by closing one eye, and with the other looking at the picture through the hand folded into a tube like a telescope. This simple device is often very helpful. The following suggestions will be found helpful in the use of pictures:

(1) See that the pictures selected illustrate the point in hand; if they do not, do not use them. Here a word of caution in regard to illustrations in the text-book is necessary. The desire of authors and publishers to introduce a large number of pictures for the purpose of making these works appear attractive sometimes leads them to use such as do not illustrate the text-matter, and when you discover that the pictures and the text do not agree, you should follow one of two plans; either ignore the picture entirely or give an oral description which will enable the class to use it intelligently.

(2) Call attention to what you wish the pupils to see. This is especially necessary with the younger classes and in all classes with pictures that contain a large number of objects; otherwise some of the pupils will give attention to one feature of the picture and others to another, and possibly some will fail to see the points which you wish observed.

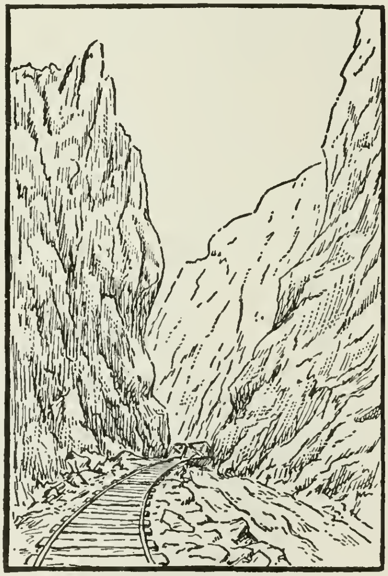
(3) Question the pupils so as to have them bring out in their observation the points desired. The answers to these questions will enable you to discover any errors in observation or judgment and to correct these at the time.

(4) When the class is large and there are not enough copies of the picture to enable all to study it at the same time, hold the picture before the class and call attention to the points to which you wish to direct their attention. This saves time and waste of effort.

(5) Finish the exercise by having the pupils describe the picture from memory. This oral description can be followed by a written one, if desirable. Train pupils to make their descriptions as true to life as possible.

(6) Use the same picture as many times as may be necessary to secure the desired result.

(7) Be sure that you connect the work of the picture with the text-matter in the lesson, provided the picture is used for the purpose of illustrating the text.

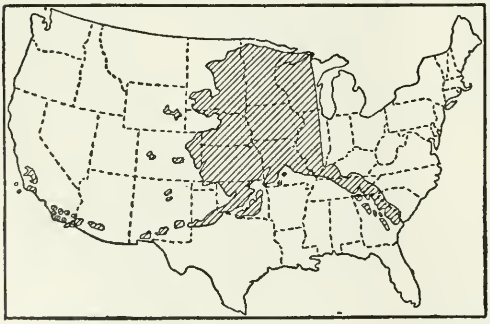


SKETCH OF A MOUNTAIN GORGE

(d) Sketches. Simple blackboard sketches are often of great advantage in making descriptions plain. A defile in the mountains, a railway cut, the form of an iceberg, the relative height of mountains, the kind of dwellings people construct in different parts of the world and many other facts can be vividly brought out in this way, if the teacher is skilful with the use of the crayon. These sketches should not be elaborate but should consist of only a few lines which will bring out the features desired. Full directions for use of the blackboard will be found in the chapters on Drawing, Vol. II, Chapter IV, and Vol. VI, Chapter XIII.

16. The Historical Element. The relation of geography to history is important and should not be overlooked. At this point we wish to speak of the historical element in geography. We must not lose sight of the interest which people take in places because of events that transpired in them. Gettysburg is an unpretentious village among the hills of Pennsylvania, but the great battle fought there has given it a world-wide celebrity that brings to it thousands of visitors every year. Concord, Lexington, Plymouth, Quebec, Waterloo and scores of other places have like interest. The historical incidents should be brought out at the time the class studies the locality in which the places are situated.

The development of any region depends upon its geographic conditions, and in the study of the industries and civilization of a locality we cannot overlook the fact that they depend upon geographic conditions. Western Pennsylvania is devoted to the manufacture of iron and steel because the locality abounds in coal and iron ore; the Mississippi Basin is the richest agricultural region of the world because of alluvial soil; the flood plains of the great rivers of the Old World, the Po, the Nile and the Ganges,



COMPARATIVE SIZE OF ALASKA AND UNITED STATES have been the homes of powerful nations since the dawn of history. These facts should be brought out with the older pupils.

The history of names is also of interest to children. This line of work can be developed by asking the class to answer such questions as, For whom was Lake Champlain named, and why? Why do the names of mountains, rivers and lakes in New England differ so widely from those in New York? In the New England states we find such names as Androscoggin, Saco, Connecticut, Katahdin, Winnepesaukee, while in New York we find Mohawk, Seneca, Cayuga, Oneida and many others differing widely from the names in the first group. The answer to this question will show the class that the names of the mountains and rivers in these parts of our country were given them by the Indians and that the original names have been retained. This leads to the further knowledge of the fact that one family of Indians occupied the New England states and another family having a different language occupied the state of New York. Another interesting exercise in names consists in having the children who are studying the United States discover how the different states received their names. Again, why are there so many French names in the Mississippi Valley, and why are there so many Spanish names in California, New Mexico and Arizona?

Caution. A word of caution may be necessary. In considering the historical element in geography just sufficient emphasis should be given to this element to lend interest to the geography lessons. It should not take precedence in this study as in case of the study of history. Were the class studying the history of the southwestern portion of the United States, they would be interested in tracing out the expeditions of the early Spanish explorers and the founding of the various missions in that part of our country, but in studying the geography of the region the only attention that should be given to these facts is that which shows the pupils that the names found there were given by the early

Spanish settlers. Again, the geography of our great cities, Boston, New York, Philadelphia, Chicago, Saint Louis, for instance, would be incomplete without reference to their beginning and growth. In nearly every phase of political geography we find a historical element which should not be ignored.

17. The Literary Element. For more than three-quarters of a century the writings of Sir Walter Scott have been drawing people of other lands to visit the scenes of events that never transpired and the homes and haunts of people that never lived. The geography of Scotland should not be passed over without calling attention to the localities immortalized by this great writer. In a like manner the geography of Nova Scotia requires a reference to *Evangeline*, that of New England to *Snow-Bound* and to some of Thoreau's remarkable descriptions. The geography of Cambridge, Mass., is incomplete without reference to the Old Elm and Craigie House, and *Hiawatha* has done for an otherwise insignificant waterfall near Minneapolis what the *Lady of the Lake* did for the Trossachs in Scotland. Many of our poets have woven into their songs the scenic beauty of our own and other lands. The literary element in geography should not be neglected, therefore, since it adds interest and meaning to the subject. Good use can also be made of this work in the written exercises.

18. Advanced Geography. Advanced geography is the title usually applied to the text-book following the elementary geography. The work done before this book is reached should have prepared the pupils for its use. The teacher, however, must make a thorough study of the book, to get a conception of its scope and plan. Some advanced geographies still in use begin with general definitions and follow these with lessons on mathematical geography. The plan of such a book should not be followed. If the previous work has been done properly the pupils will have learned the definitions of most of the terms that they will use, and they should learn others as the work leads to them. Most of the abstract generalizations called for in lessons on mathematical geography are altogether too difficult for pupils of this age. With such a book the better plan is to begin with the study of a continent or country which the work in the grade below most naturally leads up to. However, since at least one-half the time spent upon the advanced geography should be devoted to the United States, it is usually wise to begin work with our own country, unless the work in the grade below strongly points to some other plan.

In the main, the plan of the book for the study of continents and countries should be followed; otherwise, the pupils will become confused between the plan presented by the teacher and that found in the text. Type studies will enable the class to avoid repetition and are also valuable for supplementing the lessons in the book. Most advanced geographies contain too much, and the teacher should select the most important portions and place emphasis upon them. The great countries, such as the United States, Great Britain, France, Germany, Russia, China and Japan, should receive special attention. Unimportant countries, such as Spain, Portugal and Persia, can be passed over lightly, and if time is short, some of them may be omitted. Recent developments, such as the progress of civilization in Africa, the completion of the Panama Canal, the introduction of a national legislature into Russia and the War of the Nations, should receive attention in connection with the study of the countries with which they are associated,

The amount of supplementary work which can be done with the class in advanced geography is limited only by the capacity of the class, the time they can devote to the subject and the sources from which material can be obtained. Classes having access to numerous reference works and to good libraries can of course accomplish much more than those deprived of these aids. Good newspapers and periodicals are always available, and there is seldom an issue of such a publication that does not contain one or more articles which can be used with the work in geography. Among those worthy of special mention are the *National Geographic Magazine*, Washington, D. C., *The World's Work*, and the *American Review of Reviews*, *The Outlook* and *The Literary Digest*, all of New York City, and the Bulletin of the Pan American Union, Washington, D. C.

19. Commercial Geography. Before they leave the elementary school, pupils should acquire some knowledge of the sources of supply, the processes of manufacture, the methods of distribution, and the cost of our most common commodities. Whenever possible, commercial geography should constitute a part of the work of the highest grammar grade of the graded schools and of the oldest pupils in the rural schools. The introduction of this subject adds interest to the work and helps to retain the older boys in the rural schools. See *Coal*, page 220, also *Corn*, Volume VI, page 36.

If commercial geography cannot be taken up as a regular study, much can be accomplished by studying great types of industries from an industrial and commercial point of view. Such types as wheat, corn, cotton, coal, petroleum, iron and steel, the manufacture of textiles, banking and exchange, transportation, the influence which such inventions as the steamboat, the locomotive, the telegraph, and the various applications of electricity have had upon the leading industries of the world and the influence of commerce upon civilization are illustrations of topics that can be taken up successfully on the plan of type studies. For outlines for these type studies, see the lessons on *Coal* and *Corn*, above mentioned.

By whatever plan commercial geography is pursued, the pupils should be led to realize the geographical conditions upon which industry and commerce depend. Pupils should also understand how value is added to material by the expenditure of labor upon it, both in manufacture and in transportation, and how inventions and the division of labor have reduced the cost of many commodities; and they should also learn something of the elementary principles governing credit and exchange. Such knowledge is of the greatest practical value. In no other way can pupils be led so easily to realize the independence of different parts of the world.

If practical proof of this condition was needed, such proof was furnished by the War of the Nations, which broke out in 1914. For a time the commerce of the world was nearly paralyzed. The United States, for instance, had for years obtained most of the dyes and other chemicals used in manufactures from Germany. Germany and England both depended upon the United States for meat, flour and other commodities which this country could supply at less expense than they could be procured in those countries. South American countries carried on an extensive trade with Germany, but the British navy practically drove German merchantmen from the seas and the South American countries began to look to the United States to supply them with goods formerly purchased in Europe. Thus commercial conditions were unsettled throughout the world, and prices for the time being were very high.

20. Comparisons. Comparative studies bring out the points of resemblance and difference between similar features in different localities or unlike features in approximate localities. A comparison of the Andes with the Himalayas, of the Nile with the Mississippi, or of Eastern with Western civilization affords good illustration of this kind of studies. The teacher can lead the pupils to make such comparisons by asking them to answer such questions as, Why were the Japanese successful in the late war with Russia? Why is the population of the Mississippi basin more evenly distributed than that of the basin of the Nile? How do methods of farming in the central portion of the United States compare with those in China? How has the invention of agricultural machinery affected the development of agriculture in the United States? Did these inventions produce the same effect in Europe?

21. Aids. The teacher's aids in geography fall under the four heads, material illustrating industries, clippings, pictures, and books.

(a) MATERIAL. By interesting pupils and patrons, the teacher in almost any school can collect a small cabinet of specimens useful in illustrating geography. The specimens should be of products not common in the locality. All cabinets need specimens of raw material produced in foreign lands, such as cocoons of the silkworm, hemp fiber and the fiber of cocoanut. Specimens which illustrate the various processes in the manufacture of common articles, as cotton and woolen cloth, boots and shoes, wheat flour, the latter showing the various stages of the wheat from the time it enters the mill until the finished product is prepared, are also of great value.

By arranging to exchange specimens with schools in different parts of the country, valuable additions can often be made to the geography cabinet. It is also well occasionally to buy specimens which cannot be obtained at home or by exchange. Unfortunately, there are no dealers who make a specialty of handling this material for school purposes.

(b) CLIPPINGS. Newspapers and periodicals contain many articles valuable for the geography class. Teacher and pupils should be constantly on the watch for such articles. Clippings should be filed in accordance with directions given on pages 335-336, Section 15. They should always be at the disposal of the pupils, under the restriction that the clippings be handled with care and always placed back in the envelope from which they were taken, when the pupils are through using them. In connection with the clippings there should also be kept a card index of the articles in magazines which cannot be cut, and of chapters in books which bear upon the subject. This index increases in value from year to year.

(c) PICTURES. The selection, mounting, filing and use of pictures have already been described in Section 15.

(d) BOOKS. The following list of books is divided into two classes, those suitable for the teacher and those that can be used by both teacher and pupils.

(1) *Books for Teachers.* Only such works are mentioned as can be procured at nominal or moderate prices:

Special Method in Geography. C. A. McMurry. 217 pages. Macmillan Company. This is one of the most helpful works that the teacher can obtain. It gives full directions for the selection of material for the study of types.

New Basis of Geography. Redway. 225 pages. Macmillan Company. This work is valuable for showing the foundation upon which geography under the present methods of teaching rests, and it should form a part of the equipment of every teacher of the subject.

Principles and Methods of the Teaching of Geography. Holtz. Macmillan Co., New York, Chicago. A valuable work containing many concrete illustrations of the methods presented.

Man and His Work. Herbertson. 136 pages. Adam and Charles Black, London. Though an English publication, this work can be obtained of most dealers in the United States. It is of especial value in showing the influence of geographic conditions upon human activities.

The Teaching of Geography. Sutherland. Scott, Foresman and Co., Chicago. This work includes a clear and practical presentation of the purpose and aim to be reached in teaching geography, and helpful lessons on the presentation of the most difficult phases of the subject.

How to Study Geography. Parker. 400 pages. Appleton & Company. This is one of the International series and gives a more scientific treatment of the methods of studying and teaching geography than any other work included in the list. Some portions of it are somewhat difficult, but they will repay the study necessary to enable the teacher to understand them.

By the same author: *The Reproduction of Geographical Forms.* 84 pages. D. C. Heath & Company. The *Manual* renders the latest discoveries in geography valuable for the use of teachers and contains chapters on clay and sand modeling and map drawing. The book has for its purpose the grouping of the various forms and outlines of relief into types more difficult than teachers of elementary schools usually care to undertake.

Lessons in New Geography. Trotter. 182 pages. D. C. Heath & Company. Contains many valuable hints and topics with suggestions for some of the most recent methods.

International Geography. Mill. 1088 pages. Appleton & Company. A comprehensive treatise of the countries of the earth, each being treated by an author specially qualified to write upon the country which he described.

Physical Geography. Davis. 428 pages. Ginn & Company. An excellent and quite comprehensive elementary text-book upon this subject. Contains many valuable illustrations, and the text is easily understood.

Introduction to Physical Geography. Gilbert and Brigham. 380 pages. Appleton & Company. An excellent elementary work for both teachers and pupils.

Chalk Illustrations. Morton. 200 pages. A. Flanagan Company. This is a suggestive handbook for making free-hand sketches. It contains a large number of illustrations and full directions for making blackboard drawings.

The World Book in 8 volumes. The Hanson-Bellows Publishing Company, Chicago. This is an excellent reference work for both teacher and pupils. Simple in style, of recent date, printed in clear type, beautifully illustrated, and sold at a price which brings it within reach of everyone, this work forms a valuable accession to the teacher's library.

(2) *Books for Teachers and Pupils.* The various series of geographical readers put out by the different publishing houses, as well as such books on travel as the Boy Traveler series, the Zigzag Journeys series and Family Flights series, are especially interesting to pupils, and they contain many geographical facts presented more completely than it is possible to do in a text-book. The more of such books the pupils have access to, the more complete understanding of geographical subjects they will be able to obtain. Every school should have an atlas, a globe, and an encyclopedia that can be read and understood by the pupils. In addition to the above works, the teacher will find the *Statesman's Year Book* and almanacs containing statistics, such as that published by the New York *World*, the New York *Tribune*, Chicago *Daily News* and other great journals, valuable for furnishing statistical matter that is up to date.

WORK BY GRADES

22. Fourth Grade. The following outline is suggested for the work of the fourth year:

(1) Collect results of previous study.
(2) Local physiography; hills, valleys, mountains, prairies and rivers. (Section 7.)
(3) Springs, brooks, lakes, ponds, swamps.
(4) Trade and occupations of the immediate locality.
(5) Maps. (Section 13.)
(6) Excursions and imaginary journeys. (Section 12.)
(7) The world as a whole; form, size, day and night. (Section 8.)
(8) Natural divisions of land and water.
(9) Continents and oceans.
(10) Location and extent of North America and its leading physiographic features, or study of the state. (Section 10.)
(11) Topics relating to history stories (Volume Five, pages 132-135, Sections 2-5.)
(12) Local Government. (Volume Five, page 322.)

23. Fifth Grade. The work of the fourth grade should be continued as follows:

(1) Review work of the previous year.

(2) North America. Chief physiographic features; soil, climate, productions, people, political divisions.

(3) Smaller type studies of the United States, such as a coal mine, Niagara Falls, cotton raising. (Section 9.)

(4) The United States as a whole. Great divisions of surface, river systems, Great Lakes, climate, groups of states, chief products, chief manufactures, ten largest cities, chief railway and water routes.

(5) Study of the state reviewed and extended.

24. Sixth Grade. Most of the time of this grade should be devoted to the other countries of North and South America. Follow the plan for continents and countries given in the previous section:

(1) Other countries of North America. Same plan as for the United States.

(2) South America. Same plan as for North America.

(3) West Indies.

(4) Topics suggested by history lessons. (Volume Five, pages 132-135, Sections 2-5)

(5) Study of maps, making the work more minute than the previous year.

25. Seventh Grade. The work of this grade should consist of the study of Europe and Asia, and a special study of the United States; also of the chief facts of climate and mathematical geography:

(1) Eurasia. (Section 22, Topic 10.)

(2) Europe.

(3) Leading countries of Europe. In connection with each country locate its colonial possessions.

(4) Less important countries of Europe.

(5) Asia.

(6) Leading countries of Asia.

(7) East Indies.

(8) Africa.

(9) Australia.

(10) Races of men.

(11) Great commercial routes of the world.

(12) Special study of the United States, following the plan of text-book. (Section 16 and 17.)

26. Eighth Grade. The work of the eighth grade should consist of:

(1) The general study of Asia and Africa, with special attention to recent developments in those grand divisions.

(2) Great empires of the world, as wholes, including colonial possessions, method of government, resources and commercial advantages of each.

(3) Different forms of government.

(4) Distribution of heat, isothermal lines.

(5) Winds. Rainfall.

(6) The ocean, tides and currents.

(7) Distribution of natural resources of the world, forests, mineral, fuels and metals.

(8) Location of great agricultural regions. Compare with each other.

(9) Astronomical zones.

(10) Change of seasons, giving attention only to the chief causes.

(11) Commercial geography by type studies of great industries, with special view to their commercial importance.

27. Ninth Grade. The work of the ninth grade will consist of the study of commercial geography, or of physical geography from the text-book. The plan of the book should be followed.

TEST QUESTIONS

1. Show how geography differs from botany in its treatment of cotton and allied subjects, and from meteorology in its treatment of climate.

2. Show how you would lead a sixth grade class to see why London is the greatest commercial and financial center of the world.

3. Give a brief description of the surface of the locality in which your schoolhouse is situated and show to what extent you can make use of lessons on this region in teaching the natural divisions of land and water to a fourth grade class.

4. Make a freehand outline map of the state in which you live, placing in it the principal rivers and mountain ranges, the chief cities and the leading trunk lines of rail-

way. Do this without a map of the state before you. How many minutes did you spend upon the drawing?

5. Show why and in what particulars oral instruction in geography requires of the teacher more extensive and more thorough preparation than does the use of the text-book.

6. What is the relative importance of the study of maps and the study of the text, for pupils using the advanced geography?

7. Explain by the use of a globe your method for teaching the cause of day and night to a fourth grade class.

8. What places in North America have been made famous by the writings of our great authors?

9. Give your opinion of what constitutes a good text-book in elementary geography. What books come nearest to your ideal?

10. Give a plan for teaching commercial geography in the eighth grade, when no text-book is used.

11. Which of the four divisions of geography would you present almost exclusively to young children? In what grades may economic geography safely be introduced?

12. Of what other sciences should the teacher have considerable knowledge in order to present geography acceptably?

13. Make an outline of what should be included in the presentation of home geography.

14. How would you correlate an imaginary journey in a geography lesson with other school subjects?

15. What educational advantage is gained from map drawing beyond acquiring geographical facts?

16. By concrete illustration show the correlation of history, geography and literature.

17. The zones of various products of our agriculture are fairly well known to you. Construct a map showing other portions of the world where the same crops are produced. Of what advantage will this be to the geography class?

18. Give reasons for or against use of water color in map drawing.

19. Give reasons for your opinion regarding production maps.

TYPE STUDIES IN GEOGRAPHY

By

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28. Type Study on Lake Michigan.

Suggestions as to Method

(a) This topic admits of a great variety of illustrative data, including pictures, maps, and advertisements of steamships and lake summer resorts.

(b) The lake scenery of shores and islands for all the inland seas should be represented in pictures.

(c) The great ore docks on the shores of Lake Superior and the machines for unloading ore along Lake Erie can be represented in pictures.

(d) A large map of the Great Lakes showing the routes of the four chief kinds of shipment and the large lake ports can be drawn by the pupils.

(e) In connection with shipbuilding get pictures of the big shipyards and of the large passenger and freight steamers. Compare with ocean steamers.

(f) The comparison of the Upper Lakes with Lake Ontario and the lower St. Lawrence, and of the five Great Lakes with the Mississippi River and its navigable waters and large cities is striking in results.

Outline of Topics

1. General survey of Lake Michigan. Physical character.
2. Influence of the lake on commerce. Four chief products for shipment.
3. Passenger traffic on the lakes.
4. Shipbuilding on the lakes.
5. Causes for the rapid growth of Chicago.
6. Comparison of Lake Michigan and Lake Superior.
7. Comparison of lake transport with that on the Mississippi River and its branches.
8. Lake Erie and the St. Lawrence.
9. Other great lakes and inland seas of the world.

LAKE MICHIGAN

1. Lake Michigan is that one of the Great Lakes which lies wholly within the United States. With an area of 23,000 square miles, it is nearly half as large as the state of Illinois. Its surface lies 581 feet above sea level and it is in places more than 800 feet deep, so that its bottom lies partly below sea level.

Its shores are mostly low and sandy. Near Michigan City, Indiana, the white sand hills pile up to a hundred feet in height. The sand dunes or ridges reach back some distance from the shore line. The shores are regular except at the north, where Green Bay on the west reaches down a long pointed arm into Wisconsin, and Great Traverse Bay farther east, with smaller bays, breaks up the coast of Michigan. Several rivers of considerable size and length carry their waters into the lake from Wisconsin and Michigan. All the streams flowing into Lake Michigan drain an area of 37,000 square miles, or a region one and a half times as large as the lake itself.

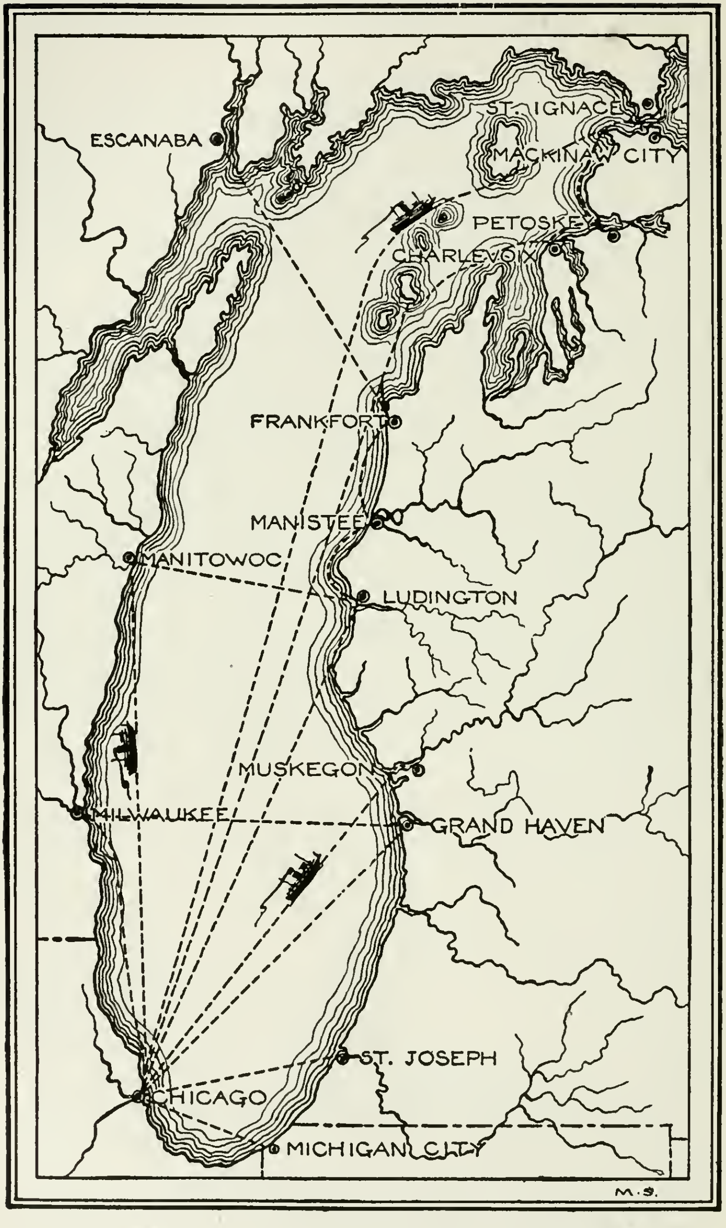
Lake Michigan extends southward from Mackinaw 350 miles and has an average width of about sixty miles. At the widest part one cannot see across it and seems to look out on an ocean.

The lake waters, being colder than the land, temper the air in summer, so that breezes from the lake are refreshing in July and August. Along the western shores of Michigan the lake waters modify the frosty air of spring so as to protect the peach orchards.

The islands and bays along the northern shores of Lake Michigan are so cool and pleasant in the sultry summer months that they are much visited by tourists and those seeking cool summer homes.

2. Lake Michigan reaches like a long finger far southward till it touches the rich prairie and farming regions of Indiana and Illinois.

In an early day farmers living within sixty or eighty miles of Chicago found it a good outlet for shipping their grain and



CHIEF COMMERCIAL AND PLEASURE ROUTES ON LAKE MICHIGAN other products to eastern markets. From the south end of the lake it is easy and cheap to ship goods to Buffalo and by way of the Erie canal to New York City and by way of the ocean to Europe. England and Germany and France are the best customers for the products of Illinois and Iowa and of all the states lying southwest of Chicago for a thousand miles. Before the railroads were built grain and meats could not be easily brought into Chicago for any distance except by the old Illinois and Michigan canal. But in recent years great double track railroads reach out in all directions from Chicago, so that it has become the greatest railroad center of the world.

On the shores of the lake are several large cities, as Chicago, Milwaukee, Racine and Muskegon, which share in this traffic. Milwaukee has an excellent harbor, protected by a breakwater, and since it is favorably located with reference to farming land, timber land and mines it has a large shipping trade. Its receipts by way of the lake are considerably smaller than its shipments, though it receives much coal from the east over the lake route. Racine, the second city industrially of the state, has also a good harbor, and has steamship connection with other lake ports. Its shipments consist mainly of farm produce and its manufactured products. Muskegon is on Muskegon Lake, which is connected by a channel 200 feet wide with Lake Michigan. This channel is deep enough to admit large vessels, and the harbor of Muskegon is one of the finest on the lake. There is daily steamship communication with Chicago, Milwaukee and other lake ports, and the trade in lumber and farm produce is large.

Lake Michigan is chiefly important as a water route for shipping goods eastward. For about four months in winter the harbors of the lake are closed up with ice, but during the other eight months the ship traffic up and down the lake is so great that it is hard to measure it. The four chief products freighted on the lake vessels are grain, iron ore, lumber and coal.

For about sixty years Chicago has been a very large lumber-shipping point, collecting white pine lumber from the streams and saw mills of Michigan and Wisconsin and shipping it by rail to the west and southwest. More than forty years ago the Chicago River was crowded with wooden vessels loaded high with lumber. But the pine woods in Michigan and Wisconsin are nearly exhausted, and this trade has now dwindled to small size.

In recent years the iron mines of Michigan and Minnesota have been sending millions of tons of iron ore to Chicago, Joliet and Gary, and the ore-carrying vessels coming from Lake Superior are of vast size. A single vessel has sometimes brought a cargo of more than 12,000 tons to South Chicago. At the great steel works of Chicago the red ore from the ships is piled up in mountain-like heaps before passing into the blast furnaces.

Chicago is one of the most important grain-collecting centers, and has numerous large elevators whose total storage capacity exceeds 65,000,000 bushels. Much of this grain is shipped east to Buffalo by the lake freighters. On the return voyage the vessels are loaded with coal from eastern Pennsylvania, which is then distributed from Chicago and Milwaukee to the people of the west.

Besides these four staple products which make up the bulk of lake shipments, a large amount of other merchandise is sent westward to Lake Michigan cities by water, as wholesale groceries, machinery and manufactures.

3. Even the passenger traffic for summer tourists has grown to be an important part of the lake commerce. Some of the passenger vessels on the lakes cost more than a million dollars each, and carry as high as 2,500 passengers. The passenger traffic averages over 16,000,000 a year. Excursion boats from Chicago carry large numbers to resorts on the west side of Lake Michigan, and Detroit, Toledo, Cleveland and Buffalo furnish other thousands for the excursion trade between nearby ports. Besides these short excursions other lines of boats offer attractive trips between Chicago and Buffalo, Duluth and Buffalo, Chicago, Mackinac Island, Georgian Bay and Sault Ste. Marie.

4. To supply the large number of ships needed in the lakes, extensive shipyards are located at Chicago, Detroit, Toledo, Cleveland, Buffalo, Superior and at a number of less-important points. All these yards are equipped with the most modern appliances for constructing steel ships. The old wooden sailing vessels have nearly all disappeared before the huge steel monsters that now plow the lakes. Some of them are more than 600 feet long and capable of carrying from 10,000 to 14,000 tons of freight.

The building of one of these ships is a work requiring great engineering and mechanical skill. The frames are made of steel beams, and to these the steel plates forming the sides are riveted. The rivets are headed when red hot and contract as they cool, making the ship stronger than it would be if the sides were made of a single huge sheet of steel, were this possible. So perfect are the arrangements for making these great ships that one of them can be completed in ninety days, and in cases of emergency the work has been completed in sixty days. This, of course, applies only to the construction of freighters. Passenger ships require a much longer time because of the large number of staterooms and other compartments necessary. The chief shipbuilding yards are at Detroit, and the ships built in all of these great establishments are equal to those built in the famous yards on the Clyde at Glasgow.

The cabins of the freighters and the parlors and staterooms of the passenger steamers are finished in mahogany and display decorations which rival the great ocean steamers. The demand for lake transportation has been so great that large fortunes have been made by the owners of shipyards at Chicago, Detroit, Cleveland, Buffalo and a number of other lake ports.

Lake Michigan is important for its fisheries. Trout and white fish are brought into the markets of Chicago in large quantities.

5. The importance of Lake Michigan for commerce is best shown by the rapid growth of Chicago. Within the short

period of one lifetime it has grown from a village to a world city of the largest size. Although Chicago had but a small harbor and that was gained by deepening the river and constructing breakwaters and docks, its nearness to the great grain-growing states and the rich upper half of the Mississippi valley has caused its remarkable growth. Chicago lies also at the point where Lake Michigan must connect with the water traffic of the Mississippi River, via the Illinois. The old Illinois and Michigan Canal was first built to join these waters. The Drainage Canal from Chicago to the Illinois, where it is extended down the valley, will some time complete this great traffic route and give Chicago access to the Gulf of Mexico for heavy barge transport.

In olden times the outlet of Lake Michigan was by way of the Des Plaines and Illinois Rivers to the Mississippi. The Drainage Canal has again turned the waters in a steady flow down this old course. In time this may develop into a great water route to the Gulf and thus greatly cheapen freight rates southward and to other lands. In this way Chicago on the lakes would have as good an outlet to the Gulf for her products as toward the east. A strong effort has been made in recent years to secure a deep water-way from Chicago to St. Louis, but such a plan has not yet been adopted by the legislature of Illinois.

6. Lake Superior is a larger, deeper and colder body of water than Lake Michigan. Its northern shores are rocky and almost mountainous, and numerous short rivers flow into it from all sides. The storms on its broad sealike expanse are like those of the ocean. But during the eight months of navigation an immense commerce is conducted by hundreds of huge lake steamers. Long steel cruisers for iron and copper, ore and grain traverse the lake from west to east, bringing coal on their return voyage.

At Sault Ste. Marie are mighty locks to let down these big freighters to the level of Lake Huron.

When we come to compare Lake Michigan with Lake Superior, we find Duluth situated at the head of Lake Superior

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ORE STEAMSHIP

Length, 600 feet; capacity 12,000 tons

and commanding like Chicago, a wide range of western traffic. Situated at the western extremity of the lake, it reaches far westward toward the wheat-producing lands of Minnesota, the Dakotas and Canada. The rapid settlement of Manitoba, Alberta and Saskatchewan and the consequent increase in the production of wheat in this part of Canada has surprised the world. Duluth, Port Arthur and Fort William on the north shore are nearly of equal importance in the shipment of Canadian grain.

But the heavy shipments from Duluth are iron ore. It requires 800 great ore ships to carry the iron ore eastward on the Great Lakes, and each year they transport more than forty million tons of ore, mostly from Minnesota.

On the other hand, Duluth is the chief center from which coal, brought west by the steamers on their return trip, is scattered by rail through the northwestern states.

Recently a twenty million dollar steel plant has been built at Duluth, and some people prophesy that Duluth will soon grow to a city of a million people and be a rival to Chicago. The copper mines on the south shore of Lake Superior also send heavily laden ships down the lakes with their rich ingots.

7. Lake Huron and Georgian Bay together are larger than Lake Michigan. The numerous islands and inlets of Georgian Bay make a wilderness and pleasure ground for fishers and summer wanderers. Lake Huron is a passage-way for all the water traffic from Lake Michigan and Lake Superior, and like all the lakes it has its great city, at Detroit, corresponding to Chicago and Duluth. An immense commerce passes through Detroit River, larger than along any similar stream in the world. The remarkable growth of Detroit and its great manufactures show the advantage of its position.

Lake Erie, though not half as large as Lake Michigan, is of very great importance among the four larger lakes. It is especially important because of the large number of populous cities clustered along its southern shore, beginning with Toledo at the west end and terminating with Buffalo at the east end. No other lake in the world has such a series of fine cities. All these cities receive large ore shipments from Lake Superior, and either work the ore over into steel products or send it on to the Pittsburgh district. Coal from the eastern part of Pennsylvania is shipped westward.

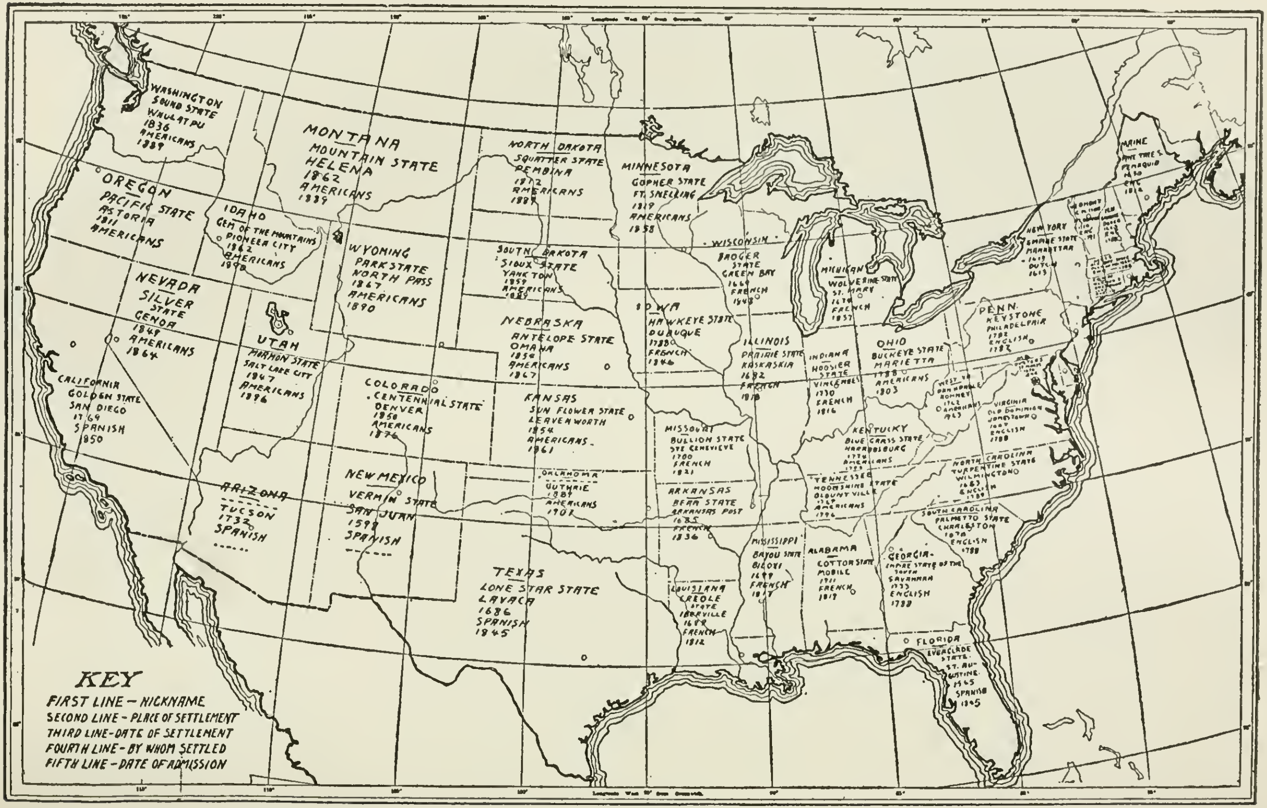
Buffalo occupies a place at the east end of the four Great Lakes of almost equal importance to that of Chicago at the west end. All the heavy lake shipments from the west terminate at Buffalo and are transferred to the Erie Canal or to railroads. The vast water power of Niagara Falls is developing extensive manufacturing establishments along the Niagara River and at Buffalo. It seems probable that Buffalo will become the center of the largest general manufacturing interest in the United States. It holds the key to the commerce coming from the west and the return wave of trade from New York City and Europe.

The four Great Lakes which we have thus far described belong together and are parts of one big system of water traffic between the east and the west.

8. Great cities are located at the upper end and at the outlet of the lakes. Others, such as Milwaukee, Toledo and Cleveland are located on commodious harbors. The trade in grain, coal, lumber and iron was the first cause of the growth of these cities. They are convenient meeting places for the boats and the railway lines which thread the country in all directions. When the deposits of iron ore were discovered around Lake Superior, Chicago, Cleveland, Gary and other cities became convenient meeting places for the ore and the coal required to smelt the ore; hence, in these cities, extensive steel mills have been established.

By comparing the important cities on the four large lakes with the cities located on the Mississippi and its tributaries, the Ohio and the Missouri, we find that the lake cities somewhat surpass those of the whole Mississippi Valley.

9. There was a time when the steamboat traffic on these rivers was of large dimensions, but in recent years it has greatly lessened. The ship traffic of the Great Lakes has been growing with gigantic steps, while the river trade has become


WASHINGTON
SOUND STATE
WHULATPU
1836
AMERICANS
1889
MONTANA
MOUNTAIN STATE
HELENA
1862
AMERICANS
1889
NORTH DAKOTA
SQUATTER STATE
PEMBINA
1812
AMERICANS
1889
MINNESOTA
GOPHER STATE
FT. SNELLING
1819
AMERICANS
1858
MAINE
PINE TREE S.
PEMAQUID
1630
ENG
1820
OREGON
PACIFIC STATE
ASTORIA
1811
AMERICANS
IDAHO
GEM OF THE MOUNTAINS
PIONEER CITY
1862
AMERICANS
1890
WYOMING
PARK STATE
NORTH PASS
1867
AMERICANS
1890
SOUTH DAKOTA
SIOUX STATE
YANKTON
1859
AMERICANS
1889
WISCONSIN
BADGER
STATE
GREEN BAY
1669
FRENCH
1848
MICHIGAN
WOLVERINE STATE
ST. MARY
1670
FRENCH
1837
NEW YORK
EMPIRE STATE
MANHATTAN
1613
DUTCH
1613
NEVADA
SILVER
STATE
GENOA
1849
AMERICANS
1864
UTAH
MORMON STATE
SALT LAKE CITY
1847
AMERICANS
1896
NEBRASKA
ANTELOPE STATE
OMAHA
1854
AMERICANS
1867
IOWA
HAWKEYE STATE
DUBUQUE
1788
FRENCH
1846
ILLINOIS
PRAIRIE STATE
KASKASKIA
1682
FRENCH
1818
INDIANA
HOOSIER
STATE
VINCENNES
1730
FRENCH
1816
OHIO
BUCKEYE STATE
MARIETTA
1788
AMERICANS
1803
PENN.
KEYSTONE
PHILADELPHIA
1782
ENGLISH
1787
CALIFORNIA
GOLDEN STATE
SAN DIEGO
1769
SPANISH
1850
COLORADO
CENTENNIAL STATE
DENVER
1858
AMERICANS
1876
KANSAS
SUN FLOWER STATE
LEAVENWORTH
1854
AMERICANS
1861
WEST VA
PANHANDLE
ROMNEY
1762
AMERICANS
1863
VIRGINIA
OLD DOMINION
JAMESTOWN
1607
ENGLISH
1788
MISSOURI
BULLION STATE
STE GENEVIEVE
1700
FRENCH
1821
KENTUCKY
BLUE GRASS STATE
HARRODSBURG
1774
AMERICANS
1792
NORTH CAROLINA
TURPENTINE STATE
WILMINGTON
1663
ENGLISH
1789
OKLAHOMA
GUTHRIE
1889
AMERICANS
1907
TENNESSEE
MOONSHINE STATE
BLOUNTVILLE
1769
AMERICANS
1796
ARIZONA
TUCSON
1732
SPANISH
NEW MEXICO
VERMIN STATE
SAN JUAN
1598
SPANISH
ARKANSAS
BEAR STATE
ARKANSAS POST
1685
FRENCH
1836
SOUTH CAROLINA
PALMETTO STATE
CHARLESTON
1670
ENGLISH
1788
MISSISSIPPI
BAYOU STATE
BILOXI
1699
FRENCH
1817
ALABAMA
COTTON STATE
MOBILE
1711
FRENCH
1819
GEORGIA
EMPIRE STATE OF THE SOUTH
SAVANNAH
1733
ENGLISH
1788
TEXAS
LONE STAR STATE
LAVACA
1686
SPANISH
1845
LOUISIANA
CREOLE
STATE
IBERVILLE
1699
FRENCH
1812
FLORIDA
EVERGLADE
STATE
ST. AUGUSTINE
1565
SPANISH
1845
KEY
FIRST LINE – NICKNAME
SECOND LINE – PLACE OF SETTLEMENT
THIRD LINE – DATE OF SETTLEMENT
FOURTH LINE – BY WHOM SETTLED
FIFTH LINE – DATE OF ADMISSION

very small. Why is this difference so marked? It was once thought that the 10,000 miles of navigable waters of the Mississippi River and its branches would form a vast system of inland water traffic. But instead of growing in the last forty years the river steamboat traffic has steadily and rapidly declined. There has been much talk of a deep waterway from Chicago to the Gulf, also from Pittsburgh and St. Paul to the Gulf. But at the present time the railroads monopolize the freight business and the rivers do not count for much.

The lakes, on the other hand, have become vastly important in heavy freight transport. The lake rates are much cheaper than the railroad rates, and in the large business of shipping between the east and the west they are saving both shippers and consumers many millions of dollars yearly. It looks now as if the freight traffic on the Great Lakes would grow steadily larger. Such cities as Duluth, Buffalo, Chicago, Cleveland, Detroit and Milwaukee are growing so fast that they may well rival the chief seaports along the Atlantic seaboard.

On the shores of the Gulf of Mexico, New Orleans, Galveston and Mobile have much importance. The opening of the Panama Canal enables these cities to carry on a larger trade, and in time they will become as important as the lake ports.

10. Niagara Falls cut off Lake Ontario and the St. Lawrence River from the traffic of the upper lakes. The Canadian government, however, realizing the importance of overcoming this barrier, began, in 1915, to reconstruct and enlarge the Welland Ship Canal. The new locks in this canal will admit of the passage of boats drawing 29 feet of water. They will be 800 feet long and 80 feet wide, and will accommodate the largest ships upon the lakes; but these ships can go no farther than Kingston at the foot of Lake Ontario because of the rapids in the St. Lawrence River. The canals around these rapids cannot give passage to boats drawing over 14 feet of water; hence, transferring cargoes from the large freighters to river boats is necessary. Doubtless the enlargement of

the Welland Canal will be followed by similar work on the St. Lawrence canals, so that in time there will be a deep waterway from the Great Lakes to the Atlantic Ocean. Then ocean-going vessels can receive their cargoes at Chicago, Detroit, or any other lake port and discharge them in any Atlantic port.

The deepening of the Erie Canal to a broad and deep barge canal at an expense of over one hundred million dollars, has greatly increased the transportation by water between the Great Lakes and the Hudson River and New York City.

On the northern shores of the lakes are a number of Canadian cities which are important commercial and manufacturing centers. Among them are Port Arthur and Fort William on Lake Superior, and Toronto and Hamilton on Lake Ontario. The most important Canadian towns on the Detroit River are Sarnia, opposite Port Huron, and Windsor, opposite Detroit.

11. There is no other series of great lakes in any country that will compare in importance with those of our St. Lawrence system. The Nile rises in a series of equatorial lakes of large size lying in the tropics, but they can never rival the Great Lakes in commercial importance. In Canada the Mackenzie has some large lakes in the cold, bleak north, but they are frozen most of the year. The great inland seas between Europe and Asia, the Black and the Caspian are the only inland waters that could be well compared with our Great Lakes, but while they are very much larger than the lakes, they are not so important in the number of great cities, nor in the extent of commerce they supply. The Black Sea as an outlet for the grain of southern Russia might be compared to the upper lakes, with Duluth and Chicago as shipping centers.

Historically considered, the Mediterranean has been the most important of all the great inland seas. All the great nations of antiquity sprang up around the shores of the Mediterranean, and the ruling cities of the world, as Rome, Alexandria, Constantinople, Carthage, Tyre and Sidon, Ephesus, Athens, etc.

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29. Type Study on Mt. Shasta.

Suggestions as to Method

(a) Use large maps freely in carefully locating all the important volcanic mountains and regions described.

(b) In explaining the shape and extent of lava flows on the mountain side, use diagrams and blackboard sketches.

(c) The different zones into which the mountain is divided can be well shown with different colored chalks. The upbuilding of a volcano by successive lava flows can be easily illustrated by crayon sketches. The whole life history of a volcano should be interpreted on the basis of causes at work producing certain results. The children can see this causal relation at every step.

(d) Collect a series of pictures showing volcanic eruptions and volcanic mountains. Let the children collect and study such pictures. The explanation of such pictures by children may require a whole lesson.

Outline of Topics

1. General description and position of Mt. Shasta.
2. How the mountain grew. The lava flows or coulees. Explosive eruptions of fragmental material.
3. Pluto's cave.
4. The tearing down of the mountain.
5. Three distinct zones developed on Mt. Shasta.
6. The forest or middle zone. The canyons.
7. The barren flat belt at the foot of the mountain.
8. Comparisons with Mt. Hood and Mt. Rainier as to position and formation.
9. Other volcanic peaks and districts in the Sierra Nevada and Cascade ranges.

MOUNT SHASTA

1. Mt. Shasta at the head of Shasta Valley and near the source of the Sacramento is a volcano that has ceased to be active. At Mt. Shasta the Sierra Nevada and the coast range come close together, and this volcano stands almost at the point of union of the two.

While there are mountains of considerable size all about it, some of them 2,500 feet higher than any of the Appalachians, Mt. Shasta towers a mile above them all and is a commanding object in the landscape of Northern California.

Its higher valleys and slopes are white with snow and glaciers even in summer, and its middle sides are black with lofty forests.

Mt. Shasta stands on a plateau nearly a mile above sea level and then rises about two miles above its base. Its base is about seventeen miles across, and its slopes, which are gentle toward the base, grow steeper as one ascends, till toward the summit they are quite rugged, and steep cliffs appear.

2. Mt. Shasta consists of rock materials which have come up through its crater and smaller openings in its sides from the intensely heated matter of the interior of the earth. It is supposed that this melted rock material, usually called lava, has been forced out by steam and explosive gases formed in the earth when the intense heat converts the water into steam. In the opinion of geologists this huge mountain was built up very slowly and gradually through thousands and tens of thousands of years by eruptions or overflows of this lava material, usually from the hollow top or crater of the mountain, but often through cracks or vents in the sides.

The lava material of one of these eruptions spread out on the mountain side is called a *coulee*. Usually the melted rock material rises slowly in the great pot-like crater, steaming and bubbling, driven up by the deep forces in the earth, until it pours over the lower side or lip of the crater. This great stream of liquid lava then flows slowly down the mountain side, and as it cools with exposure to the air it hardens and changes into rock. Often it is cracked and split into great blocks in the act of cooling, so that the surface is very rough.

Several of the more recent lava flows or coulees can now be clearly seen on the sides of Mt. Shasta, although it may be many years since the latest took place. On the northeastern slope of the mountain are several coulees, each of which can be plainly marked. The longest of these is about four miles in length. Lower down it widens out, but its edges on the sides are steep and it ends in a steep bluff. The top part is nearly flat, though sloping down. These latest lava flows, toward the top of the mountain, were thick and stiff so that they did not flow far, but built up the upper sides of the mountain like great thick shingles. Most of these coulees end in steep bluffs, sometimes 500 feet high, and they overlap one another something like the shingles on a house. As the whole mountain was built up slowly by these lava flows, the earlier ones were, of course, covered up by the later.

These eruptions and lava flows took place only occasionally with long periods of fifty years, more or less, between, so that we can hardly imagine the enormous length of time required to build up a mountain.

A second mode of building up this volcano was by violent eruptions which suddenly hurled masses of molten material, ashes and rocks, into the air. This material, called fragmental, then tumbled back upon the top and sides of the mountain. The fragmental material is blown to pieces and much broken up and can easily be distinguished from the more solid lava flows.

Sometimes a lava flow consisted of a very thin, watery, molten lava which flowed far down the mountain side and then followed the valleys many miles. One such great lava flow ran down fifty miles along the upper Sacramento Valley, filling up the bed of the stream and changing its course.

Such lava flows would build up the lower basin and valleys beyond the foot of the mountain.

MOUNT SHASTA, CALIFORNIA

As Mt. Shasta grew higher by successive eruptions and its neck-like crater grew longer (two miles and more), the pressure of the lava upon the sides was so great that it broke through in several places, and coulees were formed at the sides and lower down. Sometimes these side exits poured out such a quantity of lava as to build up cone-shaped hills and mountains. One of these cones at the southwest foot of the mountain is 2,000 feet high, and is a striking landmark called Cone Mountain. Higher up on the side a series of smaller cones was formed along a line of weakness in the mountain side. Sometimes these side eruptions grew into small mountains with craters in their summit. Some of these crater-bearing cones can still be seen on the north and northwest side of Mt. Shasta. Black Butte on the northeast has a double crater distinctly marked.

At the southwest is the cinder cone from which escaped the great coulee that flowed fifty miles down the Sacramento valley. The cone is 600 feet high, with a well-defined crater.

Mt. Shasta is really a double volcano, as seen from the north. The lower of the two peaks, Shastina, which is 2,500 feet lower than Shasta, has in its top a crater.

3. Toward the base of the mountain at the northeast and at the southwest, the ground sounds hollow under the tread, and indeed long caves are found. Pluto's cave on the north has been explored more than a mile, and is from sixty to eighty feet high and from twenty to seventy feet wide. A closer inspection will show that the cave runs parallel to a lava flow. In fact, it was formed by the molten lava in the center of a coulee flowing out through the lower end and leaving a crust of lava over a long cave. Such caves are not uncommon in volcanic regions.

4. Thus far we have discussed the forces that built up the huge mass of Mt. Shasta. But gradually the fire and internal heat of the earth subsided, and in their place came storms, snow and ice, and the whole top and upper part of the mountain resemble regions of arctic cold. The winds from the

Pacific bring fierce storms, and the snow piles up hundreds of feet high. The tearing-down forces have begun their long work and are slowly wearing down the sides of the mountain.

5. Since the work of pulling down the mountain has begun, three distinct zones have developed: (1) The barren summit covered with snow fields and glaciers but bare of vegetation, because of the arctic cold; (2) The middle belt of forests from 10,000 down to about 4,000 feet above the sea; (3) The dry flats that lie about 3,000 feet high around the bases of the mountain.

There are five glaciers on Mt. Shasta; Whitney glacier on the northern slope, pushing down the valley between Shastina and Shasta, comes from a snow field higher up and is two and one-half miles long and from 1,000 to 2,000 feet wide. In its slow, grinding movement down the valley it has carried down a vast amount of rock and sand material and has piled them up in a great mass at the lower end, forming what is called a terminal moraine. All the five glaciers on Mt. Shasta have carried much rock material with them to lower levels, and are gradually, indeed very slowly, tearing it down. At the foot of the glacier a stream is formed by the melting ice that pours down the steep slope, then plunges over a fall several hundred feet and passes down a deep canyon which it has worn out. In the warm days of spring and summer the snow and ice of the glacier melt so rapidly as to form a flood. The milky water from above tears down the canyon, cutting it deeper and sweeping sand and gravel toward the foot of the mountain.

6. The middle zone of Shasta is a great forest belt made of cone-bearing trees, among which the sugar pine is the largest. It often stands 200 feet high and has a diameter at the butt of ten or twelve feet. This middle zone of the mountain receives heavy rains carried by the wet winds from the Pacific Ocean, and its forests are well supplied with moisture.

Cutting down through this middle belt of forests lie deep canyons, some of them from 600 to 1,000 feet deep, with steep or sloping sides. Where the forests stand, the tangled roots and thick vegetation hold the soil and prevent wash, but in the canyons the rock materials are wearing down rapidly.

7. On the lower levels near the foot of the mountain the streams are swallowed up and disappear in the sand, especially in summer. In the fall and early spring there are abundant rains and the whole land is rich in grass and flowers, but the summers are long, dry and hot, and the lower belt around the foot of the mountain becomes dry and parched.

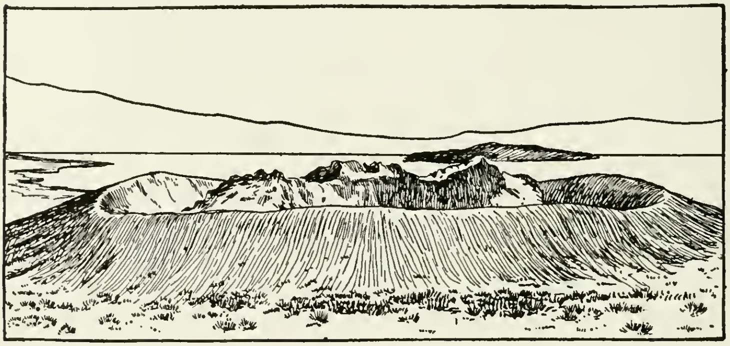
In the beds and sides of the streams at the mountain base are immense springs, gushing from the roots of the mountain. The mountain is made up of volcanic material which is loose and porous and absorbs moisture. For this reason the melting water from the snows and glaciers sinks into the sides of the mountain and reappears in great springs lower down at the foot of the mountain.

8. Glancing back at the whole life history of Mt. Shasta we see that the gradual building up of such a huge mountain must have occupied many thousands of years. The eruptions, if they took place only at intervals of many years, as is now the case with many active volcanoes, would add very slowly to the mountain's height. Yet Mt. Shasta seems to be made up entirely of erupted material.

Its history therefore reaches so far back into the past that it is hard for the imagination to estimate the time. Finally the interior heat forces slowly died away.

There is today one spot on the side of the mountain where noxious gases still come forth and where there is some heat still felt. But now for many years at least there have been no eruptions or lava flows, and the cold winds, snow and ice have long been at work crumbling and grinding the mountain, which had been built up by the great heat forces. This work of tearing down the mountain will doubtless go on for thousands of years to come. It also is a slow process, and we can hardly imagine how long a time it will take to level down this huge mountain again.

9. In the northern part of Oregon, about thirty-five miles west of Portland, there rises a beautiful volcanic peak known as Mt. Hood. It rises far above the high ridge of the Cascade range and is the most commanding object in the landscape. The upper part of the mountain is glittering white, and all its lower sides are clothed with forests of deep green. Its summit is reported by mountain climbers to contain part of a volcanic crater. From the top of this mountain, standing on a narrow rock, one can look down steep precipices for thousands of feet. Like Mt. Shasta this peak is a volcano whose upper portion is covered with snow and ice and whose middle portion or belt bears great forests, well supplied with moisture by the Pacific winds.



PANUM CRATER, IN CALIFORNIA
Lake Mono and Paoha Island in the distance

The most commanding mountain peak of the whole Sierra Nevada and Cascade ranges in the west stands out alone in southern Washington, Mt. Rainier. This is a volcanic mountain 14,525 feet high, and standing alone it can be seen as it rises majestically from sea level to its white summit. It is a difficult mountain to climb because of its height, the snows and glaciers which cover its summit and sides, the steepness of its upper portions and the fierce winds sweeping across its frozen summit. The geologists who climbed to its top found there partial walls of a huge crater and within this a smaller crater at its edge whose walls form the present summit of the mountain. The crater was nearly filled with snow and ice.

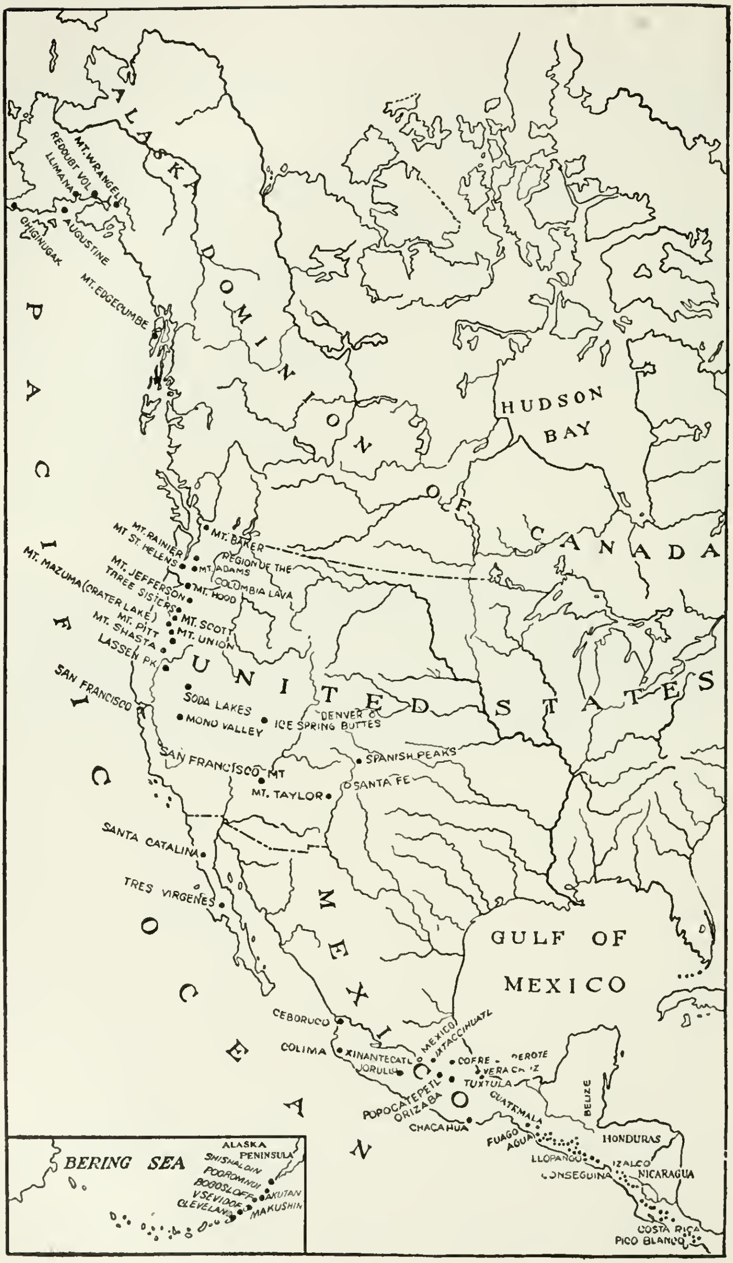
From this lofty summit the mountain climber looks down upon the map of western Washington. Puget Sound is spread out like a winding crooked lake. The Cascade range looks like a low ridge of mountains. Mt. Adams and Mt. St. Helena, two large volcanic peaks, stand to the south, and the Olympic mountain beyond Puget Sound to the northwest. Like Mt. Shasta, Mt. Rainer is a volcano whose huge bulk has been built from lava flows and explosive eruptions. Standing out alone it is even more striking and majestic in appearance than Mt. Shasta. The glaciers formed in its upper slopes descend farther into the deep valleys of the heavy forest zone. This mountain is the most striking object in the view from Tacoma and also from Seattle on Puget Sound.

California, Oregon and Washington each has its great and beautiful volcanic mountain. In all the Pacific coast mountains these great volcanoes are the outstanding peaks whether rising above or from the midst of mountain chains.

10. But each of the states named has many other lesser volcanic peaks, as Mt. Baker, Mt. Adams and Mt. St. Helena in Washington. In Oregon not only Mt. Hood, but Mt. Pitt, Mt. Jefferson and the Three Sisters are volcanic cones, and thirty miles north of Lake Klamath is a crater lake five miles across which occupies the crater bowl of an ancient volcano.

In California, the Sierra Nevada mountains have two very interesting volcanic districts, one called the Lassen's Peak district in northern California; the other the Lake Mono region of the central part of the state, both very curious and interesting. Each of these districts shows a group of volcanic peaks and craters.

11. Eastern Washington and Oregon with a part of Idaho are covered with a vast sheet of lava in places 4,000 feet thick. The lava is here spread out over a more or less level country, covering an area about four times as large as the state of Illinois. It has been a difficult problem for geologists



VOLCANIC AREA OF NORTH AMERICA

to explain where such a vast quantity of lava came from. It seems that part of it along the eastern foot of the Cascade range flowed down from the series of volcanoes we have been describing, but most of it is now believed to have oozed up from the interior of the earth through cracks or fissures. The lava, being in a very watery, molten condition, spread out widely over the plains for hundreds of miles. The lower part of the Snake River has cut a deep gorge down through this lava bed, forming a canyon 4,000 feet deep and fifteen miles wide.

The broad lava plains of Washington and Oregon have a very rich soil caused by the crumbling of the volcanic rock, and vast wheat fields display the richness of the land.

12. The Rocky Mountains contain also some interesting remnants of volcanoes. The Spanish peaks sixty miles south of Pueblo in Colorado are worn-down relics of once lofty volcanoes.

In New Mexico are found well-preserved craters from which the lava flows can be traced, e. g., Mt. Ocate in the northern part of the state.

13. In Alaska, beginning on the mainland and extending from Mt. Wrangell hundreds of miles southwestward in a narrow belt through the Aleutian Islands, is a series of more than fifty volcanoes, many of which are still active. Eruptions and earthquake shocks have been often experienced in recent times.

In Old Mexico, south of Mexico City, is a series of great and towering volcanoes, among which are Orizaba, 18,200 feet high, and Popocatepetl, 17,876 feet. They have been climbed to their tops where great deep craters are found which have been somewhat active in modern times. Farther south, extending through the states of Central America, is a numerous series or belt of active and extinct volcanoes. North America therefore seems well supplied with volcanoes.

REFERENCES ON MT. SHASTA. *Mt. Shasta.* Monograph. American Book Co.

Volcanoes of North America. Russell. Macmillan Co.

There are about 350 active volcanoes in the world. Some of the most noted of these are Mount Vesuvius, on the Bay of Naples, Mount Etna and Stromboli in the Mediterranean Sea and the volcanoes of Hawaii. A few in Alaska and the Aleutian Islands are occasionally active and until very recently the inhabitants of the United States have supposed that their country was safe from disasters attending volcanic eruptions, but it would seem that it is not.

In 1914 Lassen Peak, near Mount Shasta, showed signs of volcanic activity, which continued with intervals of quiescence during the summer. In June and July a discharge of steam, which at times reached a height of 10,000 feet, occurred. In May of the following year a river of mud poured from the north side of the crater and flowed down the mountain side, inflicting much damage on the farms and forests in the vicinity. In November of 1916 the mountain again became active, belching clouds of black smoke at intervals. Since this so-called smoke consists of fine dust or volcanic ash, the indications at that time were that Lassen Peak might assume a state of violent activity.

If the condition of the interior of the earth were known, geologists would doubtless experience little difficulty in accounting for volcanic eruptions. As it is, all theories concerning volcanic action are founded, to a certain extent, upon theories of the condition of the earth's interior. Careful observations extending over a long period of years have, however, led to certain definite conclusions, the most important of which are that the two chief causes of volcanic eruption are pressure, which with friction may raise the temperature of the rock to the melting point, and steam, which is the chief volcanic gas. The recent eruption of Lassen Peak and of other volcanoes supposed to be extinct shows that extinct volcanoes may become active, and that no division of volcanoes into active and extinct can be made with assurance. The interior of the earth seems to be constantly changing, though the changes are much slower and much less violent than in past geological ages.

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Elementary Physical Geography. Tarr. Macmillan Co.
The Story of the Earth. Seeley. Appleton.
Geology. Le Conte. American Book Co.
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30. Type Study on the Coast of Norway

Suggestions as to Method

(*a*) Let the children examine the larger maps illustrating these various deep-cut, rocky coasts, and their location with regard to the continents and oceans. Let them observe the strong points of resemblance, in respect to mountain districts just back of these coasts, also forests, fisheries, islands and cities. Let them note the relative distance of these coasts from the equator, whether to the north or south. Let them note the character and occupations of the people upon such shores and islands.

(*b*) The geographies and supplementary readers contain pictures which will help further to illustrate the scenery of these coasts.

(*c*) A rough free-hand sketching of these coasts with their chief islands and bays will help the children to fix the facts.

(*d*) A comparison of the causes producing like results on the coasts of Norway, Scotland, Maine, Alaska, Patagonia, New Zealand and other coastal regions explains clearly many scattered facts in various parts of the world on the basis of principles, but it forms a series of important facts worthy of review and drill until they are well fixed in mind.

Outline of Topics

1. Physical and climatic character of the coast of Norway.
2. The fjords.
3. The ice fields and glaciers. Greenland.
4. The islands.
5. The fisheries.
6. Lumbering.
7. History of Norsemen and Vikings.
8. Customs and dress of the people.
9. Comparison with Scottish coast and islands. Ireland.

10. Comparison of coast of Maine, Newfoundland, Labrador.
11. Comparison with the Alaskan coast.
12. Comparison with coast of Patagonia.

THE COAST OF NORWAY

1. The sea-coast of Norway for about fifteen hundred miles is very rocky and mountainous. In the summer time it is much visited by travelers on excursion steamers from England and the south. In winter time the days are short and the northern part of Norway does not see the sun for months. Thousands of islands, rocky and steep, are scattered along the shores.

A voyage to this rocky coast in summer time is interesting because of the grand scenery of the deep gorges or fjords which reach far up into the mountainous country.

The Norsemen who first discovered the shores of North America came from this rocky coast of Norway. Many Norwegian immigrants have also found their homes in our northern states.

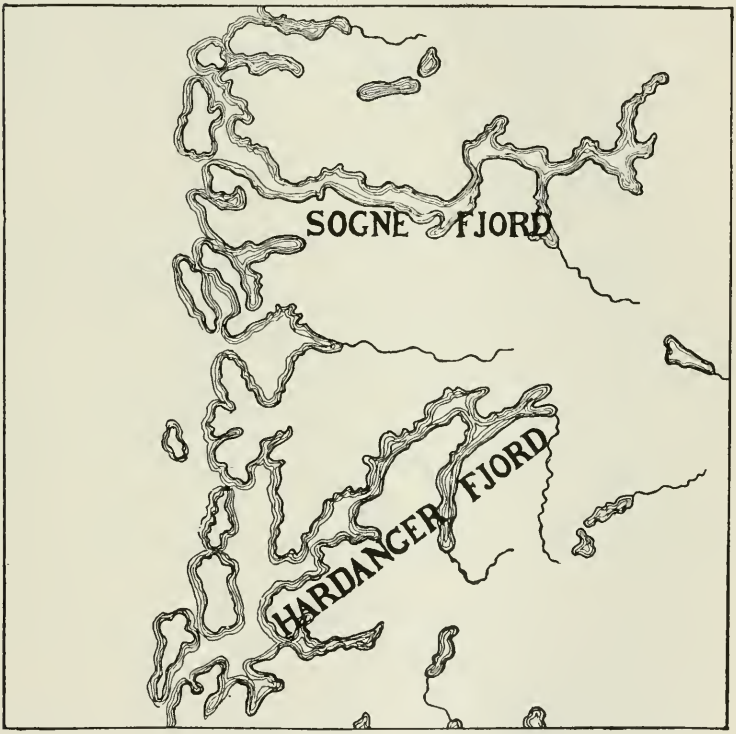
Partly on account of the warm ocean currents from the west which bathe the coasts of Norway, the climate is much warmer than we might expect. This is also true of England, Scotland and Ireland, while the corresponding coasts of Greenland and Labrador are cold.

2. The most interesting part of the shore scenery is the fjords or deep, crooked bays which reach far into the land. There are a dozen of these great arms of the sea, from fifty to a hundred miles in length.

The Hardanger Fjord is the most southerly and the finest of the west-coast fjords. The steamer passes between rocky islands into the mouth of this deep bay which winds its crooked way 114 miles into the heart of the mountains. The steamer sails up against the towering precipices, and turning an angle comes to a new scene in the changing panorama. High up on the slopes of the mountains the glaciers are seen pushing their way down the valleys from the broad

ON NORWAY'S WESTERN COAST

snow fields on the high plateaus above. Foaming waterfalls are seen breaking down over the rocky ledges. At the head of the fjord is the village of Odde with its old-fashioned square houses whose roofs of birch bark and turf are covered with wild flowers and shrubs.



THE BROKEN COAST OF NORWAY

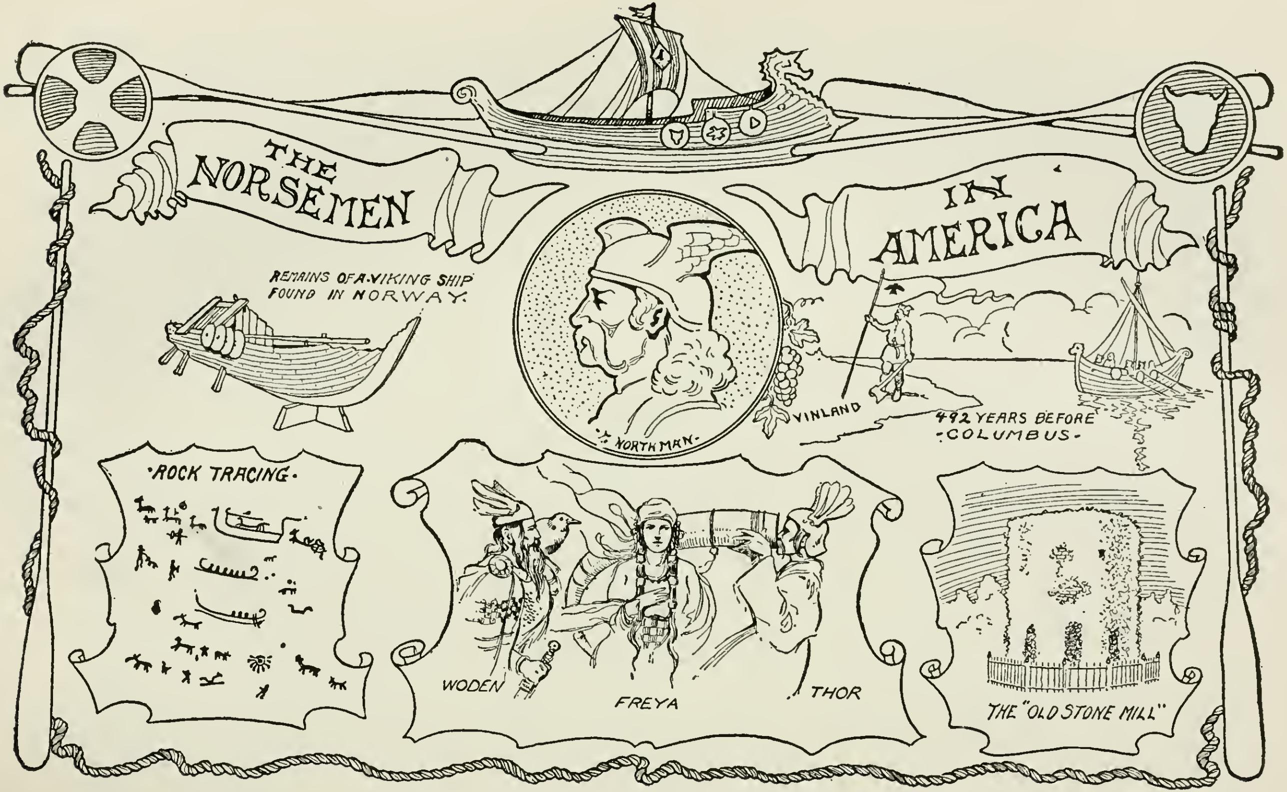
Near Odde are some of the finest waterfalls in the world. One of these is the Skaejaeggedals, 550 feet high. Another fall has a series of cascades dropping 2,225 feet.

The Sogne Fjord, farther north, is 136 miles long, and in places is more than 4,000 feet deep. It has also about a dozen branch fjords. One of these, the Naerö, is wonderfully wild. The steep walls rise thousands of feet above the water, and the water at the foot of the precipice is very deep. The Nord Fjord has grand and picturesque scenery.

> The entrance is guarded by a maze of islets; there are vast ranges of snow-capped mountains in the background, and in the foreground are wooded hills dotted with small cultivated fields. The farmsteads in the Nord Fjord have an air of prosperity that recalls the Hardanger and the waters of the fjord reflect the tints of the farms and foliage—glittering blues where the waters are deep, and translucent yellows and greens where they are shallow. Costumes, like the landscapes, are varied in color and individual in form. The women wear close-fitting red or green bodices; and the men wear knee-breeches, white stockings, red coats with high collars and stiff felt hats. (Monroe.)
>
> The Geiranger Fjord is about eleven miles long and from two hundred to four hundred yards wide. Its perpendicular walls rise to heights ranging from three thousand to five thousand feet. Over these steep cliffs plunge many waterfalls, and when the tops are covered with clouds, they seem to fall direct from the sky. The series of waterfalls known as the "Seven Sisters" is probably the most beautiful in the Fjord. Seven silken streaks of white fall from the overhanging cliffs to the fjord below. (Monroe.)

3. These deep fjords were worn out in part by the glaciers which in ancient times covered the mountains of Norway. These glaciers came down from the great snow fields on the mountain slopes and plateaus and they scoured out the valleys on their way to the sea. The power of glaciers to do this work is shown by the depth of the valleys. Beside the mountain walls from 2,000 to 4,000 feet high the water in the gorges is sometimes 4,000 feet deep, and the sides of the mountains are worn smooth by the great masses of ice that once wore down these valleys.

On the plateau southeast of the Hardanger Fjord is a great snow field twenty miles long and in places ten miles wide. The winds from the Atlantic bring the snow storms in winter which pile up the snows upon this plateau many hundreds of feet deep. From this great snow field the glaciers are formed which push down through the valleys on the rim of the Hardanger Fjord. Farther north are two extensive snow fields, each of which covers more than 500 square miles. These broad snow fields are but the small


THE NORSEMEN
IN AMERICA
REMAINS OF A VIKING SHIP FOUND IN NORWAY.
NORTHMAN
VINLAND
492 YEARS BEFORE COLUMBUS
ROCK TRACING
WODEN
FREYA
THOR
THE "OLD STONE MILL"

remnants of the immense ice field which once covered the whole of Norway to a depth of about 6,000 feet. A similar vast sheet of ice now covers Greenland and moves slowly toward the west coast.

In the northern part of Norway the glaciers do not melt away, because of the colder climate, but push down through the valleys until they reach the sea. In the Alps also are extensive glaciers, covering the higher slopes and plateaus, and gliding down through the valleys in long ice streams. The highest mountains of Norway are but 8,400 feet in elevation, but on account of their far northern location the snow fields lie much lower on the mountains and do not melt away with the summer heat.

4. Scattered along the coast are numberless islands, big and little. One writer states that there are 150,000 islands on this jagged shore. Many of them rise steep and rocky out of the water, and some are smooth and rounded with the scour of the glaciers. There are many winding passages among these thick-set islands, and the scenery from a steamer yacht is remarkably beautiful. About one-eighth of the population of Norway lives upon these islands. The people are largely engaged in ship-building, fisheries and commerce upon the ocean.

5. About 80,000 men along the coast are employed in the fisheries. Swarms of fish feed and spawn along this shore because of the great quantity of fish food in its waters. The cod fisheries are the most important and extend hundreds of miles along the middle and northern coast. In the Lofoten islands alone 4,000 men are engaged in the cod fisheries. The fish weigh from eight to twenty pounds, and are sometimes five feet long. They are cleaned and hung from wooden frames head downward and dried; others are salted and dried upon the broad flat rocks, then sent to coast cities like Trondhjem, Stavanger and Bergen, and thence shipped to Germany and other southern lands. The herring and mackerel also migrate to these waters. Many are caught and barreled and sent to southern markets.

Salmon streams are also found along this coast but are not now so productive as formerly and are controlled by Englishmen.

The Norwegians also send out fleets of vessels to engage in the big sea fisheries of the Arctic Ocean for whales, seals and walrus. Their fishing waters extend from Greenland on the west to Nova Zembla in the far northeast. It is a rough, comfortless life, full of hazard, and many lives are lost, but these bold, hardy seamen are willing to take the risks. All the men, captain and sailors of the crew, share in the catch.

The fisheries of the Norwegian shores greatly resemble those along the coast of New England centering at Gloucester. The hundreds of fishing schooners which sail from the New England coast to the banks of Newfoundland are like those of Norway fishing about the Lofoten Islands and farther north. New England also sent formerly many whalers north to the Arctic seas for whale and seal. The fisheries of Norway yield about seven million dollars a year.

6. The forest industries of Norway are still more important. A large part of the mountain sides is covered with cone-bearing trees, spruce, fir, pine, or birch, with some oak and elm. The exposed rocky shores on the west coast are somewhat barren of forests, but the sheltered east slopes are wooded. The rains borne by the sea winds are favorable to the growth of forests, so that about one-fifth of Norway is well wooded. Sawmills and lumberyards are found in the valleys and on the lower courses of the streams. The logs are sped down the mountain sides and floated on the rivers to the sawmills. The lumber industries of Norway bring a profit of about eighteen million dollars a year. A large business has sprung up in the manufacture of paper from pulp made from the Scotch spruce.

The lumber business of Norway is much like that of Maine and the Adirondacks, where the forests are being rapidly used up for lumber and paper-making. The Great Lakes region and the upper Mississippi River in Minnesota have been for many years the center of big lumber production, but the forests are now giving out and will not be able to supply the great demand for timber products.

7. From the rocky coast of Norway in the Middle Ages (from the seventh to the tenth century) came the fierce bands of ocean pirates and plunderers known as the Vikings. They ravaged the coasts of England, Scotland and Ireland. They plundered Normandy and the French coasts and set up kingdoms there. They even sailed into the Mediterranean lands and established their power in Sicily. They sailed to Iceland and the coasts of New England and were the most dreaded warriors of that age. They were the first to explore the American coast.

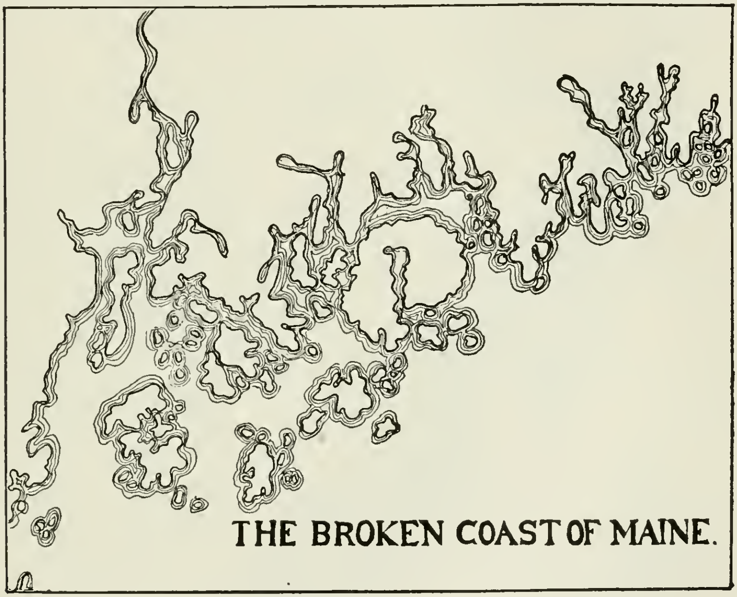
8. The Norwegian people of the present time are noted for their simple manners and democratic ways. There is no noble class of country gentlemen as in England. The people are honest, thrifty and industrious. The country is not rich in products and the people are not given to luxury and wastefulness.

Although about 20,000 emigrants have been coming yearly to the United States, the population in Norway has been increasing somewhat rapidly.

9. The rocky coast of Norway reminds one strongly of the west coast of Scotland. The numerous rocky islets and deep bays or friths of the Scottish coast were also formed by the scour of glaciers and the storms of the Atlantic, as in Norway. The Scottish highlanders along the barren rocky coast are in character and independence much like the Norsemen. An examination of the west coast of Ireland shows the same broken and rugged coast line, with deep, penetrating bays and rocky headlands.

10. Boys and girls who have studied the map of Maine have noticed what a wilderness of deep bays and rocky islets it shows. Passamaquoddy Bay, Penobscot Bay, Casco Bay, Mt. Desert Island, and scores of rocky isles and headlands remind one strongly of the Norwegian coast. The heavy glaciers, as in Norway, scoured out these deep valleys and smoothed and rounded the cliffs and headlands. This coast

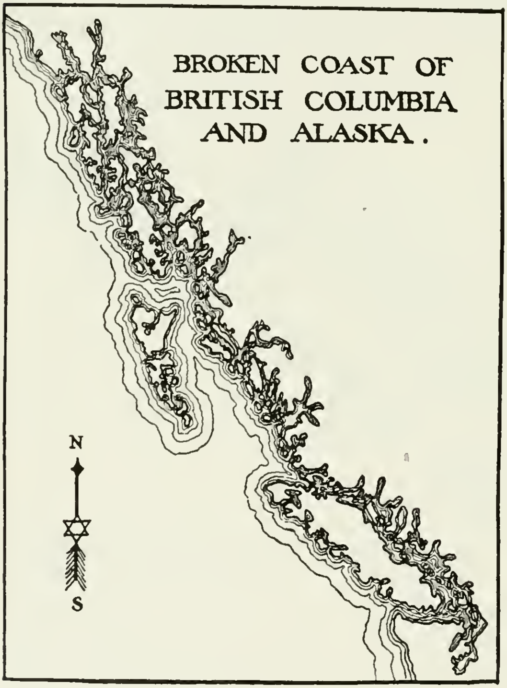
of Maine is also a delightsome summer resort for thousands of people who wish a cool seaside home in hot weather. Back in the hills and mountains of Maine are still extensive forests, and along the shore profitable fisheries. The coasts of Nova Scotia, Newfoundland and Labrador exhibit a similar rugged and jagged front toward the ocean, where rocky cliffs and broken islands with deep bays offer shelter and harbors for the fishermen along these coasts. Greenland along its western coast displays at the present time a great ice-sheet that forces its way down the westward slope into the valleys and bays and is scouring out deep fjords similar to those now seen on the shores of Norway. The west shores of the Atlantic from Greenland down to Maine are now far colder than the eastern shores of the Atlantic in Norway, Scotland and England.



THE BROKEN COAST OF MAINE.

11. An examination of a large map of North America from Puget Sound to Alaska brings to our notice another broken and mountainous coast, thickly set with rugged

islands. A voyage by steamer through the winding channels among rocky islands and headlands of this coast rivals the famous scenery of the Norway fjords. Excursion steamers make this trip in summer for the pleasure of tourists. The mountain chains along the Alaskan coast rise higher as they get farther north, till Mt. St. Elias, near the coast, is 18,000 feet in height. The heavy rains from the Pacific bathe these coasts with moisture so that big forests cover the lower slopes. A warm current from the Pacific also warms this whole region and produces mild weather far to the north. In all these respects the coasts of Alaska and Norway are much alike. The coast northward from Puget sound abounds in salmon fisheries which are very productive, and farther north the seal are found upon the islands.



The coast of Alaska is, however, much richer in coal and metals than is that of Norway, and is developing great productive wealth.

12. Far to the southern extremity of South America on the west side is still another mountainous and island-studded coast. It extends 1,200 miles to Cape Horn and is a wilderness of broken islands and rocky headlands.

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Europe. Carpenter. American Book Co.

Geological Sketches. Archibald Geikie. Macmillan Co.

Boyhood in Norway. Boyesen. Scribners.

Little Journeys in Norway and Sweden. Randall. A. Flanagan Co.

Peeps at Many Lands A. & C. Black, London.

31. Type Study on Petrograd: A Project of Peter the Great.

Suggestions as to Method

(*a*) In many books which are now in common use in the schools there are excellent pictures and maps of modern cities. The usual geographies will help greatly. The geographical readers also are well illustrated with views of cities. The larger cyclopedias contain maps of the larger cities. But the completest maps are those found in the modern guide books. Make good use of such maps and pictures.

(*b*) Such a study suggests historical readings of several interesting kinds, as Motley's essay on Peter the Great; Macaulay's essay on Frederick the Great; Plutarch's Julius Caesar; the Life of Napoleon, Bismarck, Queen Elizabeth, etc.

(*c*) The natural advantages and disadvantages of cities for commerce and government can be studied out on maps of Europe and the relative locations of large capitals fixed.

(*d*) The comparison of cities in regard to size, advantage of location and the longer or shorter periods of their history will be found interesting, and will help to fix important eras of European history.

(*e*) Each city is also a representative of a nation and people. Its growth, progress and history are a standard for the whole.

(*f*) It would be well at the end to inquire how many great cities there are in Europe whose importance is due not to a ruler but merely to commerce, as Hamburg, Liverpool, Glasgow, Marseilles, etc.

Outline of Topics

1. How Peter came to build it. The advantages and disadvantages of its location.
2. The building of the city.
3. A government center; public buildings; contact with foreigners.
4. Peter's city becomes a center for Russian commerce by building canals and highways, and later railroads.

5. Later growth of other cities in Russia.
6. Peter's statue and the great royal palaces and churches.
7. Moscow, Riga and Odessa.
8. Constantinople and Constantine.
9. Berlin, Frederick the Great, King William and Bismarck.
10. Paris, Louis XIV and Napoleon.
11. Vienna, Francis Joseph.
12. Rome, Julius Caesar.
13. London, Elizabeth and Victoria.
14. Washington.

PETROGRAD

1. The city of Petrograd is the newest of the important cities of Europe. It was founded by Peter I, usually called the Great, only a little more than two hundred years ago. It is younger than Boston and Philadelphia, and yet it is the largest city of Russia and one of the big capitals of the world. The city was named St. Petersburg, but in 1914, after the War of the Nations began, Czar Nicholas II changed the name to Petrograd.

When Peter became czar of Russia as a young man, his kingdom had no good seaports. Archangel was on the frozen northern seas. Russia was shut out from the Baltic and had no possessions on the Black Sea. Commerce with foreign countries was thus shut off and Russia was itself a sort of backwoods, benighted country.

Peter became interested in building ships and went to Holland, where he worked for some months as a ship's carpenter, learning the trade. He had a great scheme in his mind for making Russia a strong nation in its commerce and shipping, although Russia at that time had no seacoast worth mentioning.

In order to secure land along the Baltic he managed to bring on a war with Sweden, in the course of which he got possession of a part of the coast of the Baltic, and then he selected the present site of Petrograd as a place for this city which was to become the capital of Russia. It was a miserable place in which to build a city. For miles all about the land was swampy and very unhealthful. The River Neva poured its flood waters into the Baltic at this point, and often flooded the whole region. A strong wind from the west sometimes piled the waters up ten feet or more above the usual level. The country to the east and north was full of marshes and lakes, and to the south was barren and had very few inhabitants. The city lies far to the north, on the parallel of 60 degrees, as far north as the southern point of Greenland. The winters are long and very cold. And yet in the midst of these mud marshes Peter was determined to build a great seaport and his capital city.

2. The czar had despotic power and compelled a hundred thousand men to leave their homes in Russia, hundreds of miles away, and set them to work upon his new city. The hardships and exposures were so great that most of them died.

Piles were driven down into the mud to form the foundations of large buildings. Every nobleman was compelled to build a house or palace in Petrograd. Stone was brought from a distance and in vast quantities. The foundations of enormous buildings were laid on the millions of piles driven into the swamps. Peter lived in a small wooden house on the banks of the Neva and watched the quick growth of his city. This little house is still preserved as the home of the great czar.

At all costs Peter was determined to have a great seaport. Forts were constructed and commerce began to develop between Russia and other countries of western Europe. The principal harbor was at Kronstadt, some distance from Petrograd, and smaller vessels brought the goods to the city. A channel was later dredged from Kronstadt to the city to enable larger vessels to come up to the wharves of Petrograd and extensive wharves were built along the shores of the islands at the mouth of the Neva. The city itself was built partly upon these islands, and the many channels of the river with the islands between make it somewhat like Venice and Stockholm. The river and channels are solid with ice five or six months of the year and the bridges are not much needed at such times.

Streets were laid out through the marshes and filled up; public buildings were constructed, a large parade ground for soldiers was made by filling up a swamp; canals were built connecting the city with the great lakes and rivers to the east and southeast. Great highways had to be built through the surrounding swamps connecting the city with the mainland to the south and east. It has been said that hundreds of thousands of lives were lost in founding and building up the city by Peter the Great, and even now it is an unhealthful locality. The extreme, changeable climate and the exposure to west and north winds make it severe upon health, and the death rate among the people is very high, much higher than that of other large European cities.

3. But in spite of the unfavorable location of the city and its high death rate it has grown rapidly and has become one of the great world cities. Peter made it the capital of his huge empire. The government buildings and offices were constructed here. Moscow, the old capital, was deserted by the court and many of the nobility. Many splendid palaces were built by the nobility in the new city. Foreigners also came in large numbers to enjoy the benefits of the trade that began to develop in Petrograd. In this way it became a city of mixed population, where the Russians came in contact with the progressive ideas of other countries. Science, manufactures, modern inventions and education were taken up by the better classes in the new city, and later in Russia, and these things have had a large influence upon the government and institutions of the Russian people.

4. In order to make Petrograd a very important export center for Russia it was necessary to build canals connecting the Neva River and its great lakes with the headwaters of the Volga and the Dnieper. These canals were built at much expense by the Russian government, but they poured the product of the great central plain of Russia into Petrograd, and since that time the great city has been the great export

center for more than half of Russia. The imports from western Europe have entered Russia by the same door.

Railroads centering in Petrograd were built much later along both shores of the Gulf of Finland and toward the east, south and west. These railroads also had to be built across the swampy districts for many miles before reaching the rich and more thickly populated parts of Russia. The Trans-Siberian Railway extends eastward to the Pacific coast.

5. Manufactures have naturally developed at Petrograd because it is so great a center for the collection of raw materials. Textile wares, machinery and rails and tobacco are among the more important. But there are few large manufacturing plants such as are found in Chicago. Moscow, the old capital, is more important as a manufacturing center than Petrograd. Russia has very extensive house industries where products are made by hand in the homes of the people, but it has been slow in developing the great factory system common in England and America.

6. In Petrograd are found a number of monuments and palaces which remind us directly of Peter the Great and of his absolute government. On a square in front of the Senate House and overlooking the Neva is a great bronze statue of Peter the Great on horseback. The horse is galloping up the slope of a huge rock and gaining an outlook over the river beyond.

The admiralty and the winter palace of the former czar are immense buildings which stand on the banks of the Neva and look across it to the fortress of Peter and Paul, surrounded at the back with gardens and parks.

The church of St. Isaacs near by has an immense dome like the capitol at Washington, but gilded with gold. Its columns are built of costly stones, and it contains gold carvings and beautiful ornaments. This church cost about twenty millions of dollars. There are many other great and gorgeously decorated churches in Petrograd.

Within a few miles of Petrograd there are a number of royal palaces which were used as residences of the emperor.

7. The old capital of Russia was Moscow, and it has the greatest of the royal palaces, the Kremlin. Moscow was the place that held to old customs which Peter wished to change, and for this reason Peter wanted the capital changed to Petrograd. Moscow is now a greater manufacturing city than Petrograd.

STATUE OF PETER THE GREAT
Erected at Petrograd

Riga, on the Gulf of Riga, has grown to be an important outlet for Russian products toward the Baltic and western Europe. It has a more favorable location for shipping than Petrograd.

Odessa, on the Black Sea, has also grown to great importance for the shipment of grain and agricultural products to the Mediterranean lands. The railroads that have been built in the last fifty years have turned traffic toward the southern ports, as Odessa and Astrakhan, instead of sending it to the north.

8. The city of Constantinople was founded by Constantine the Great in 330 as the new capital of the Roman Empire. It had been a city for hundreds of years before, so that it is one of the oldest of European cities. But it was rebuilt on a grand scale by Constantine. A massive wall was constructed around the new city. Beautiful marble palaces decorated with the finest Greek sculptures were erected. A large forum and theaters were built, and vast sums of money were spent in making the new capital the most beautiful and sumptuous city of the East. Its location on the Bosporus is the natural one for a great city, as its position commands the traffic between Europe and Asia and between the Black Sea and the Mediterranean. Its climate also is temperate and favorable. In all these respects it is the opposite of the city of Petrograd, which lies more than 1,400 miles almost directly north of it across the Black Sea and Russia, in a cold climate.

Constantinople was taken from the Christians by the Turks in 1453, and since that time it has been the capital of the Turkish Empire. It has one of the oldest and most magnificent churches in the world, orginally built as a Christian church, and later by the Turks converted into a Mohammedan mosque. Just as Petrograd is the center for magnificent Christian churches, so Constantinople is the chief place for Mohammedan mosques, with their slender minarets rising over the seven-hilled city. The complete control which the city of Constantinople had over all commerce passing out of the Black Sea was the reason Peter the Great found it necessary to build his capital far to the north on the Baltic.

9. The city of Berlin is called the Kaiser City. Frederick the Great first made Germany, or Prussia, to be respected

as one of the great powers of Europe, and Berlin, his capital city, he did much to improve.

"Unter den Linden," a broad avenue lined with magnificent buildings, is the central thoroughfare of Berlin, very wide, with several shaded avenues in one. At the east end, opposite the residence of the old Kaiser, stands the lofty bronze monument of Frederick the Great on horseback. Splendid museums, palaces, theaters, hotels, the great university and the guard house and arsenal face on this street. A beautiful bridge ornamented along its sides with statues leads this street across the river to an island on which is a small park, faced on one side by the Old Museum with a Greek front, on the other side by the ancient royal palace, a vast structure occupied by the present emperor and his court.

Berlin is the great military center of Europe. Vast armies can be gathered to this central point in a few days or even hours, and then sent out by the chief railroad lines, owned by the state, in any direction. The regular garrison of Berlin in time of peace is 25,000 men. There are important forts outside of the city.

Some sixteen miles to the southwest is the summer home of the Kaisers, Pottsdam, a wonderfully delightful suburb, with great gardens, ponds, palaces and favorite homes of the German kings and emperors.

Bismarck and King William by their remarkable success in three wars, with Schleswig, with Austria, and with France, raised Germany to a commanding position among the states of Europe, and since then Berlin has grown perhaps more rapidly than any other capital in Europe. In cleanliness, in fine streets and public buildings, in the freshness and orderliness of all city affairs, it surpasses almost any city of Europe but Paris. It is more than double the size of Petrograd or Constantinople. But like Petrograd it owes its importance chiefly to its being a capital city, the center of the royal power, and of political influences. Berlin, like Petrograd, has naturally few advantages. It is located on litical leadership, a vast center of commerce, manufactures and education, as well as of military power. This militarism, the pride of the Prussian, was completely broken at the end of the World War, in 1918, with the defeat of Germany.

10. Paris was for several centuries the most important capital in Europe. Two hundred years ago Louis XIV, the most famous of French kings, kept up a magnificent court at Paris, built great palaces and lived most extravagantly. He made Paris the political center of Europe and the ruler of court fashions. One hundred years ago Napoleon I became emperor and again made Paris the central city of Europe. Napoleon stood out as the most commanding figure of his time and for a while controlled nearly the whole of Europe. His burial place at the Hôtel des Invalides is much visited by travelers.

In the last hundred years Paris has led all European cities in first introducing modern improvements, great sewers and pure water supply, beautiful boulevards and clean streets, magnificent public buildings and museums, theaters, art collections and sanitary improvements. It is probably the most beautiful and fashionable city of the world today.

All the other cities which we have mentioned, especially Petrograd, Berlin, and in fact all large European cities, have followed and to a large extent imitated the city of Paris in making public improvements.

11. Vienna, the capital of Austria, during the last sixty years has been largely rebuilt upon a plan adopted by Francis Joseph, the former Emperor of Austria, more than fifty years ago when he was a young king. Vienna, which was in 1850 a very dirty, unhealthful and crowded city of 600,000 people, became one of the most attractive and healthful cities of the world, with about 2,000,000 people. All the great sanitary improvements were carried out, a splendid series of fine public buildings erected, but the destruction of the Austro-Hungarian state has nearly ruined Vienna.

12. The city of Rome, historically the most important city of Europe, founded about 2,700 years ago by Romulus,

has had many great men, but Julius Caesar, who ruled in Rome nearly 2,000 years ago, was the most famous. Rome at that time was the capital of the Roman Empire, which included about all of the civilized world. Most of the important modern nations have sprung from the wreck of the old Roman Empire. Rome is therefore the mother city of Europe. Its ancient ruins of the old Roman days, as the Colosseum, the aqueducts, the Pantheon and the Forum, have been visited and admired by travelers for hundreds of years.

St. Peter's, the greatest Christian church, and the Vatican, the vast palace and home of the pope, are two of the most interesting and important buildings in the world today. In the last forty years, also, a modern city of Rome has been built and modern improvements have been carried out, so that Rome, which for a long time was a very unhealthful city in summer, has become a safe residence, and a fine modern capital for Italy.

13. The greatest city of the world today is London, and during the long period of its history its two most famous rulers have been women, Elizabeth and Victoria; and perhaps no greater men have been known in England than the two poets who flourished during the reigns of these queens, Shakespeare in Elizabeth's time and Tennyson in Victoria's.

14. The capital city of the United States is named for Washington, who was nobly said to be "first in war, first in peace, and first in the hearts of his countrymen." The selection of the place for the capital city was left by Congress to Washington, and he chose the present site. For many years the city remained small, but in recent years it has grown into a large and beautiful city.

As shown in the above illustrations, many great cities have owed their founding and later importance to great rulers. Likewise David and Solomon made Jerusalem a famous city, and Alexander the Great founded Alexandria in Egypt.

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32. Type Study on New Orleans

Suggestions as to Method

(*a*) Make a large local map of New Orleans showing river docks and harbor.

(*b*) Make drawings and sketches showing plan and construction of the Eads jetties.

(*c*) Study the map of the Gulf States and the position of New Orleans relative to the rivers and railroads. Also with reference to ship lines to foreign lands.

A commercial map of the world showing ocean steamer routes is needed.

(*d*) Pictures of harbors, shipping, jetties, etc., will make the ideas clear and definite.

(*e*) The comparisons of New Orleans with other ports on the Gulf and on both oceans is a good opportunity to study maps and large relations and to develop thinking power in the children.

(*f*) Give vigorous drills on the lists of cities and rivers, forming series to be remembered.

Outline of Topics

1. Position of New Orleans; its natural advantages and disadvantages.
2. Earlier and later history of New Orleans.
3. Shipments of cotton, sugar and rice.
4. The Eads jetties and their effects.
5. Interesting peculiarities of New Orleans.
6. Galveston, Mobile and other Gulf ports compared with New Orleans.
7. Probable effects of the Panama Canal on the trade of New Orleans and the Gulf ports.

8. Comparison of Atlantic and Pacific ports with New Orleans, e. g., Quebec, New York, Philadelphia, San Francisco and Portland, Oregon.

NEW ORLEANS

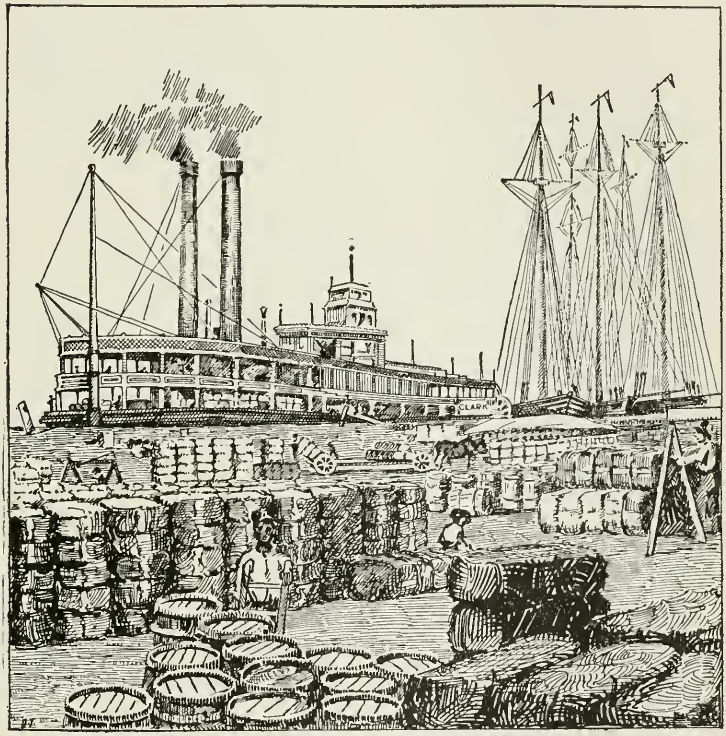
1. New Orleans, about ninety miles from the mouth of the Mississippi River, has a commanding position for controlling trade which centers about the outlet of this great river and valley. The early French settlers chose New Orleans as the most favorable point for a city which should control the river mouth. By small vessels it can be approached from the east through Lake Pontchartrain. But the main entrance for large vessels is by way of the delta mouths. The swampy delta lands south of New Orleans are too low for a good city location. Even New Orleans at flood time is threatened by the Mississippi, and it is protected by levees.

The chief importance of New Orleans is that of a seaport open to ocean traffic with the east coast of the United States, with Europe and South America and the whole world. In recent years it has become an important railroad center for collecting and shipping out the products of the South. Before the days of railroads, and even up to 1860, it was the chief center for a large steamboat traffic on the Mississippi River. But this trade has gradually dwindled to a small amount.

2. The original settlers at New Orleans were the French, and for about two hundred years they dwelt in New Orleans and settled many towns and villages in Louisiana. The country was named for Louis, the French king, and at several times the French dreamed of settling up the Mississippi Valley and of building up a great French empire in America.

But a little more than one hundred years ago Napoleon I of France decided to sell Louisiana to the United States. Jefferson was then president. He knew that the western settlers in Ohio, Kentucky, Tennessee and Illinois were very anxious to get possession of New Orleans and the Mississippi mouths, and he succeeded in purchasing Louisiana from Napoleon for about fifteen million dollars. This purchase included not only the present state of Louisiana, but all the lands west of the Mississippi to the Rocky Mountains. This purchase doubled the amount of land included in the United States

At St. Louis and at other points along the Mississippi were French villages which lay in this territory of Louisiana. The families of the old French settlers still live in Louisiana. Many of the people still speak the French language. Some of the interesting old buildings in New Orleans are in the French style. The old French market is one of the interest-



WHARF SCENE AT NEW ORLEANS
Bales of cotton and barrels of sugar and molasses

ing sights for visitors, and one famous festival, the Mardi Gras, is still yearly celebrated at New Orleans.

New Orleans in the South on the Mississippi, and Quebec in Canada, the chief seaport of the St. Lawrence, are both French cities and have many French buildings and customs which excite the interest of travelers.

3. New Orleans is naturally the shipping point where cotton, sugar, rice and other products of the South within several hundred miles are collected and shipped out to sea.

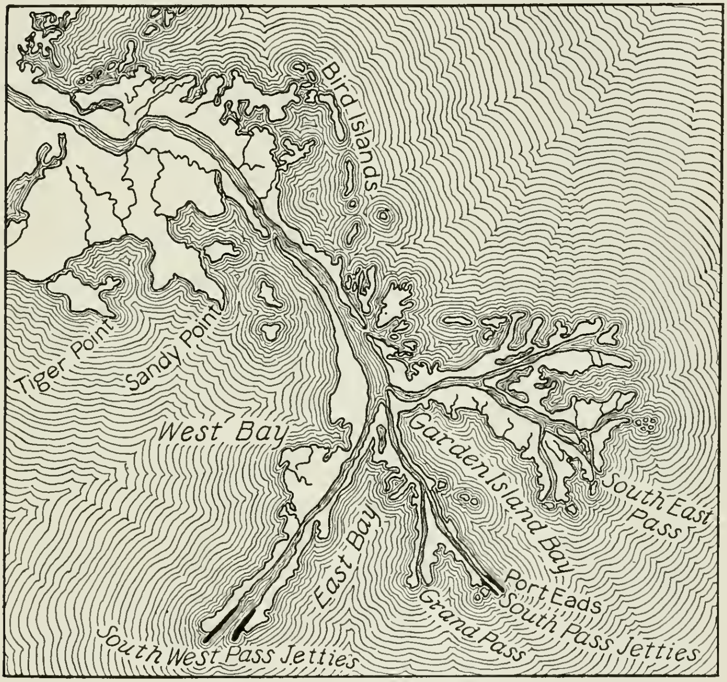
Cotton is the big staple product of the South, and in the fall and winter when cotton is being harvested and sent to market the wharves along the river at New Orleans are stacked high with cotton bales, and many ocean-going steamers are being loaded with cotton for Boston, New York, Liverpool, Hamburg and other cities.

Along the gulf shores in Louisiana and other states are many sugar plantations which produce quantities of raw sugar and molasses which are sent into New Orleans. Near the river at New Orleans are big sugar refineries that prepare this sugar for the market. On the wharves in the season are innumerable barrels of sugar and molasses ready for transport to eastern markets by steamship. It is the business of the hundreds of dock hands—negro roustabouts—to roll these barrels upon shipboard.

In the southland in recent years the rice plantations have become very important. Not only the swamp lands can be flooded for rice cultivation, but the rich prairie lands along the sluggish bayous and streams have been made into rice lands. Low ridges or dykes are thrown up around the fields, and water from the streams is pumped by engines upon the land at the season of rice planting and culture. Much of this rice is shipped to New Orleans, where it is cleaned, sorted in the rice mills and then packed for shipment.

4. New Orleans needs of course a deep outlet for large vessels at the delta mouths. For many years it was impossible for large vessels to enter the mouth of the river on account of mud bars found at the outlet of the various delta

mouths. Many vessels trying to cross these bars got stuck in the mud and either failed to enter or were much delayed. The United States government, which looks after the improvement of harbors and rivers, for many years kept steam dredges at one or two of the mouths to scoop out the mud. In this way a passage about fifteen feet deep was kept open.



DELTA OF THE MISSISSIPPI

An engineer named Captain Eads had studied the currents of the Mississippi River for many years and devised a plan for getting a deep, narrow channel through one of the mouths which would remain open and not fill up again easily with mud. His plan was to build jetty walls out of long willow mattresses, which would narrow the current across the bar and cause the current to swerve through with such strong force as to carry the mud far out into the Gulf.

He began to build these jetty walls several miles above the mouth. The mattresses were sunk in long rows along the sides of the channel but some distance from shore. Other mattresses were laid on top of the first till they rose above the water and formed a new shore line. The water was turned into this narrow channel and began soon to cut a deep way for itself. By the time he got the double line of jetties built out across the bar into the Gulf the water in the channel began to deepen and was also dredged out till it was thirty feet deep. His project was entirely successful, and since then large ships have been able to enter the mouth of the Mississippi and easily come up to New Orleans.

5. New Orleans has some interesting peculiarities. The old part of the city has the narrow streets of the French period. The houses are small, with projecting balconies. The little shops are places to buy old bronzes and curios. In the French market near Jackson Square early in the morning is a lively scene, where the clatter of many languages is heard, especially French and Spanish, and the varied booths and wares remind one of European city markets.

On account of the swampy, wet ground on which New Orleans is located, the burial places in the cemeteries are built in the form of a series of stone structures above ground in which the caskets are placed.

In times of high water the general level of the city streets is below the water in the Mississippi. This has rendered the question of city drainage difficult. It was finally settled by an engineering plan by which the sewage was pumped into the Mississippi and the excess water of rains turned into Lake Pontchartrain and Lake Bourne. By the improvement of the drainage and by good sanitary provisions the health conditions in the city have much improved, so that cholera and yellow fever can be hindered.

The old government building, used as a capitol by the Spaniards, and now occupied by the supreme court, is the place where the Louisiana territory was publicly transferred to the United States.

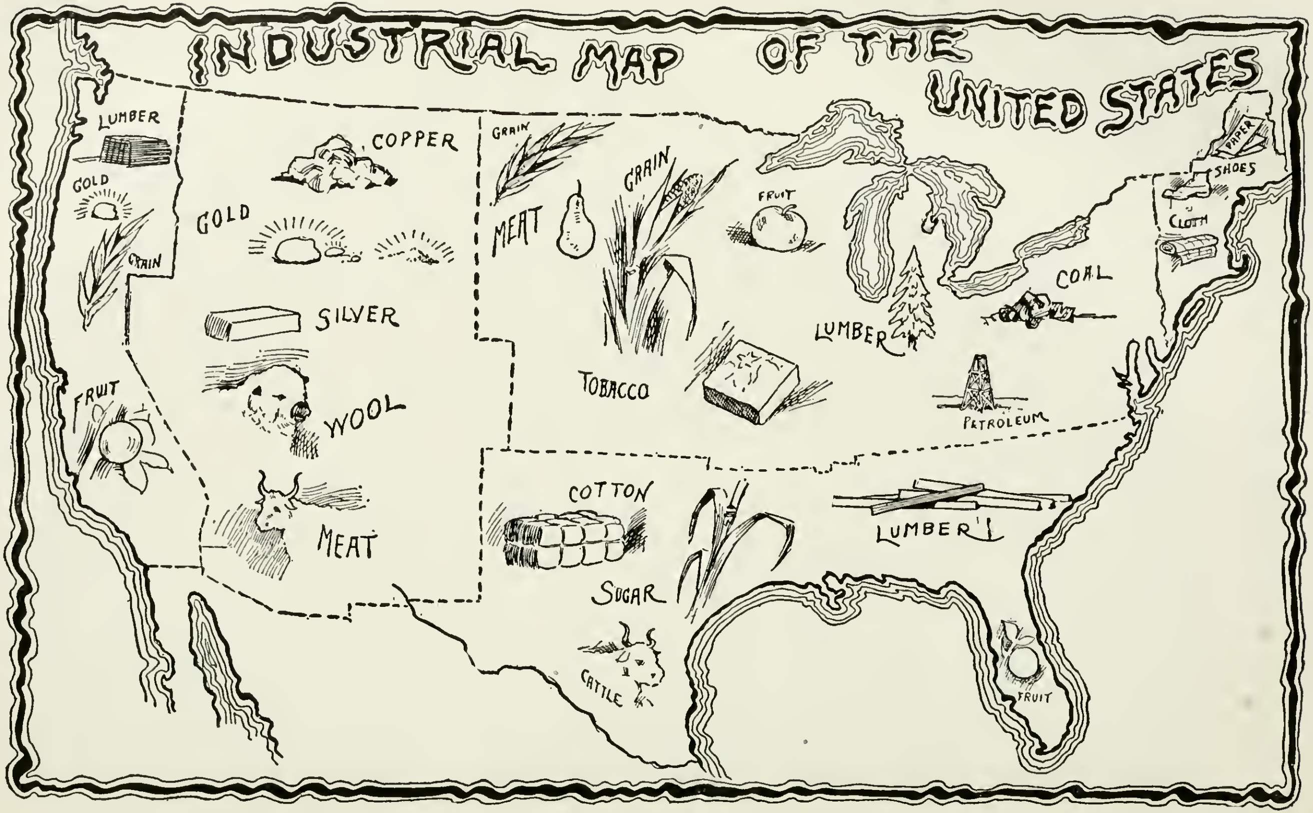
The leading square of the city, Jackson Park, has a statue of General Jackson on horseback. The battle of New Orleans, in which Jackson's army completely defeated the veteran troops of England, was fought in what is now a part of New Orleans in January, 1815. Jackson's reputation won in this battle was what raised him later to the presidency.

6. In respect to commerce New Orleans stands out far ahead of all other seaport cities on the Gulf. In the shipment of southern staples Galveston has become a rival of New Orleans. It has stood first in the amount of cotton shipped from its wharves. It has steamship lines connecting it with New York and Boston and with the great cities of Europe and other parts of the world.

At the narrow outlet from the harbor into the ocean the government has dredged out a deep passage for large ships through a shallow bar. The passage is protected by rock jetties built out into deep water. The jetties consist of broken stone dumped into the water till a long ridge of rocks is formed rising about seven feet above the water. Heavy granite rocks weighing each several tons are placed along the tops of the ridges to resist the effect of storms. The sweep of the tide through this narrow passage between the two long rock ridges or jetties helps to keep it scoured out.

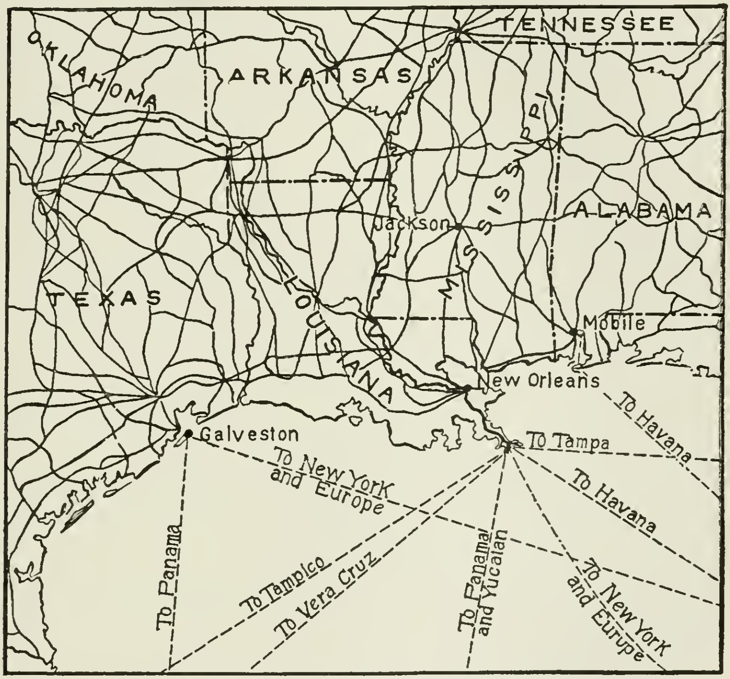
Since the disastrous flood and hurricane that destroyed the city in 1900, a great sea wall more than three miles long has been built on the seaward side of the city to protect it against a repetition of that disaster.

Mobile, on Mobile Bay, another port somewhat larger than Galveston, is important for the shipment of southern products. Cotton and lumber are the important shipments. Like New Orleans and Galveston, the outlet of Mobile Bay by which ships approach the city was obstructed by a shallow bar. The United States government here also dredged out a passage and by means of jetties provided a safe entrance up the bay to Mobile. Mobile, like New Orleans, is one of the southern cities that still preserves many of the interesting features of the old southern life.


INDUSTRIAL MAP OF THE UNITED STATES
LUMBER
GOLD
GRAIN
FRUIT
COPPER
GOLD
SILVER
WOOL
MEAT
GRAIN
MEAT
GRAIN
FRUIT
TOBACCO
LUMBER
COAL
PETROLEUM
PAPER
SHOES
CLOTH
COTTON
SUGAR
CATTLE
LUMBER
FRUIT

The other important port on the gulf is Pensacola, with a fine harbor and a large United States navy yard. As in Mobile, the entrance to the harbor is protected by forts.

All these southern ports are alike important for their shipment of cotton, sugar, lumber and naval stores. The entrances to their harbors have all been improved by expensive jetties and dredgings so as to secure access to large vessels. The mouths of the Mississippi have been improved at a cost to the government of about twenty millions of dollars.



MAP OF THE GULF STATES AND RAILROADS

New Orleans is the center of a vast railroad and ocean carrying trade

7. The completion of the Panama Canal is expected to produce important changes in the movement of trade toward the south. Its opening will bring New Orleans and the

southern cities into close relation with the west coast of South America and North America, and also with the harbors and peoples of East India, China and Japan. It may be that there will be a more general movement of the products of the Mississippi Valley southward, so that the outlet for American products will be much more by way of New Orleans. The most natural outlet for the commerce of the Mississippi Valley is by way of New Orleans and the Gulf ports. Heretofore most of the products of the upper Mississippi Valley have been shipped eastward to Boston, New York, Philadelphia and Baltimore. But crossing the Alleghany Mountains is difficult, while the shipment of heavy products down the Mississippi would be easy and cheap.

8. In its favorable position for controlling trade at the mouth of the Mississippi River, New Orleans may be compared with other cities on the Atlantic and Pacific coasts. Quebec and Montreal on the St. Lawrence likewise monopolize the trade of the lower St. Lawrence.

The importance of New York City is largely due to its position at the mouth of the Hudson, which connects it by means of the Erie canal with the Great Lakes. New York is thus the main point of export for the products of the Great Lakes and of the upper Mississippi, which is tributary to Chicago, Milwaukee, Duluth, etc.

Philadelphia at the mouth of the Delaware has a similar advantage in Pennsylvania, but cannot so easily draw products across the mountains.

Baltimore, Washington and Norfolk enjoy the advantages of trade along the valleys of rivers flowing into Chesapeake Bay, as the Susquehanna, Potomac and James. Jacksonville, Florida, has an advantageous position on the St. Johns River, eighteen miles up the stream.

On the Pacific Coast San Francisco lies on the bay where two rivers enter which drain the great valley of Central California.

Portland, Oregon, has a position near the Columbia similar to that of New Orleans on the Mississippi, commanding the trade of that valley and opening to the ocean. Its chief exports are wheat and lumber. New Orleans is also important for both lumber and wheat, but its other products are more important. The Columbia River at its mouth has been obstructed with a bar dangerous to shipping.

New Orleans near the mouth of the Mississippi occupies a leading place among the Gulf ports similar to New York among the Atlantic seaboard cities, San Francisco among the Pacific ports and Chicago among the lake ports.

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33. Type Study on the Panama Canal

Suggestions as Method

(*a*) To understand fully the Panama Canal it is necessary to study maps, cross sections and pictures and to use the imagination in constructing a full and adequate mental picture.

(*b*) The engineering difficulties can be appreciated by studying the geographical conditions as based on good relief maps and cross sections.

(*c*) The advantages of the canal as a means of shortening ocean routes can be seen by measuring and comparing the distances between important cities as New York and San Francisco, before and after the completion of the canal.

(*d*) The reason why the United States reserved the right to fortify the canal may be understood by studying the effects of war upon the movements of our fleets.

(*e*) Study and locate the other important canals and see their importance as compared with the Panama.

(*f*) Drill children upon the location of countries and cities with relation to the canal.

(*g*) This topic applies mathematics to the solution of a number of large, comprehensive problems, e. g., What income should the United States receive from tolls when the canal is finished to reimburse her for her expense?

Outline of Topics

1. The Panama Canal the final outcome of the efforts of early explorers and later engineers to find the short route to India. History of the various projects before the United States government undertook the building of the canal.
2. Choice between two plans and which was taken.
3. Sanitary conditions and improvements.
4. Engineering problems and how met: (1) Culebra Cut; (2) Chagres River; (3) the Locks; (4) Harbors.
5. Management of the work and men, and machines employed.
6. Cost of work. Comparison with other canals.
7. Effects upon commerce and cities.
8. The canal free to all nations.

PANAMA CANAL

1. The Panama Canal was opened to traffic August 15, 1914. This event symbolized the accomplishment of one of the greatest engineering feats in the history of the world, and the completion of a project in which the American people have been interested since the Mexican War.

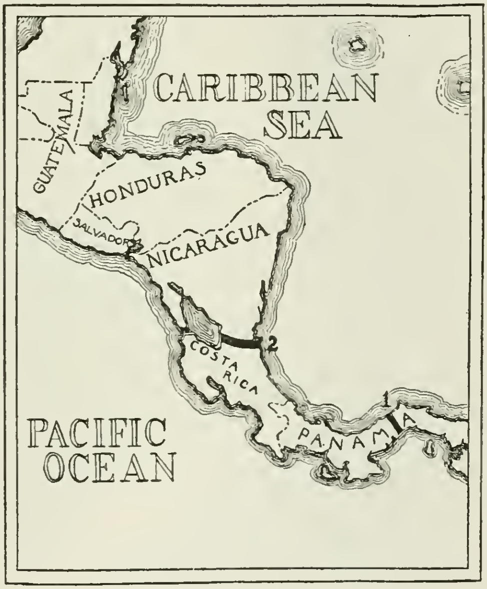
Columbus and many later explorers were searching for a westward route to India. But the long stretch of land from Cape Horn to Alaska obstructed all these efforts. For a while the shortest route from London to India was by way of the Cape of Good Hope; later by way of Gibraltar and the Suez Canal. A still longer route was by Cape Horn. As soon as the narrow neck of land between North and South America was clearly explored, people began to talk of a canal to save the long journey around South America.

The Spaniards early built a road across the Isthmus at Panama to transport the treasures of Peru and the west coast of South America to ships in the Caribbean Sea bound for Spain. The rush of gold-seekers to California in 1849 made the Panama route important, and in 1855 a railroad was completed across the Isthmus at Panama. It was built by New York capitalists with great expense and hardship.

In 1881, De Lesseps, having made a success of the Suez Canal, which greatly shortened the route to India, organized a company to dig a canal at Panama connecting the oceans. The work was carried on with energy for eight years, during which about $300,000,000, mostly of French money, was spent, and then the company went into bankruptcy.

A new Panama Canal Company was organized, which for twelve years kept the project on foot, preserved the machinery, studied the climate and engineering difficulties, and finally in 1904 sold out its interest to the United States government for $40,000,000.

Early in 1904 the United States bought from the small state of Panama for $10,000,000 a strip of land sufficient for the building and control of the canal. The government then began work and pushed the project vigorously until the canal was completed.

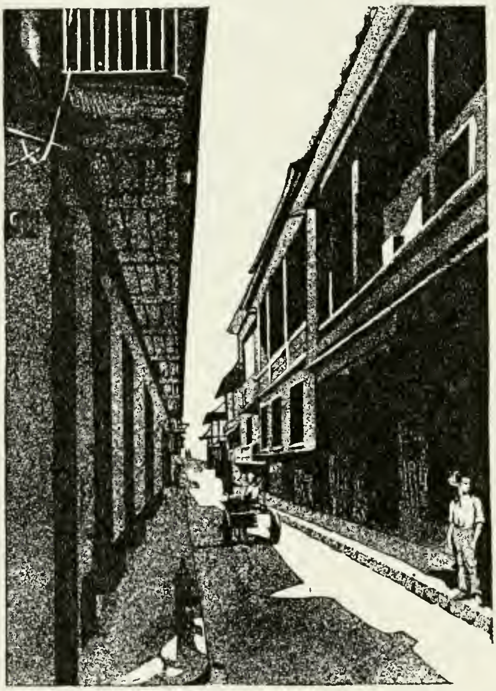


THE TWO CANAL PROJECTS

1. Panama Canal Route
2. Route first proposed through Nicaragua

2. Two important questions had to be settled before the United States could undertake the work; first, whether the Panama or the Nicaragua route was the better. The government engineers had surveyed both these routes and made estimates, and many were favorable to the Nicaragua route. On account of the fact that much important work

had been done at Panama and because the United States government was able to get a full title to the necessary strip of land, Congress decided in favor of the Panama route. Second, there was much controversy between those favoring a sea-level canal without locks, and those advocating a high-level canal with two sets of locks. Congress at last voted for a high-level canal, and the work was carried on for this purpose. A sea-level canal would have required much more time and expense to execute.



SCENE IN CITY OF PANAMA
In the native section. Note the narrow and dark character of the street

3. One of the chief difficulties in building a canal was the unhealthful climate of the Isthmus and the destructive diseases, yellow fever and malarial fever, which prevailed among laborers and officers. It was thought that unless these diseases could be prevented by sanitation the canal could never be built. It had been discovered that yellow fever is communicated by a mosquito, the stegomyia, which has bitten a yellow fever patient, and thus transfers the germ to another human being. Similarly malaria is communicated by the anophales mosquito or gnat.

Colonel Gorgas, who had charge of the Department of Sanitation on the Isthmus, began in 1904 a war of extermination against the mosquitoes. At this time both yellow fever and malaria had broken out afresh among the men and had produced a panic. All pools and places for stagnant water were drained, or oil was used where breeding places could not be dried or closed. Streets were paved, marshes drained, patients were placed in screened houses where mosquitoes could not reach them. There was a rigorous cleaning-up and clearing away of underbrush, and the quarters for the workmen and officers were screened to prevent mosquito bites. As a consequence yellow fever disappeared and malaria was greatly reduced. In fact, the canal zone became a healthy, cheerful place, even for white men and their families. There was no fear that the canal could not be completed because of dangerous diseases that carried off the workmen.

4. The construction of this canal involved a complex group of engineering problems. At the shortest distance the Isthmus is about thirty-six miles across. The canal is more than fifty miles in total length, forty-one feet deep, and two hundred feet wide at the bottom in the narrowest cut. The middle section, which is the greater part of the canal, thirty-one and one-half miles, has a surface eighty-five feet above sea level.

The engineering difficulties may be briefly stated as follows:

(1) It was necessary to cut through a low mountain range, the highest part of which is more than three hundred feet above sea level. For about nine miles the canal had to be blasted through solid rock. This is known as the Culebra Cut, and more than eighty million cubic yards of material, mostly rock, had to be removed and carried to distant places. A considerable portion of this cut was completed by the first Panama Company of De Lesseps. In this part of the canal thousands of men were kept at work. The drilling and blasting went on day and night, and the different levels of

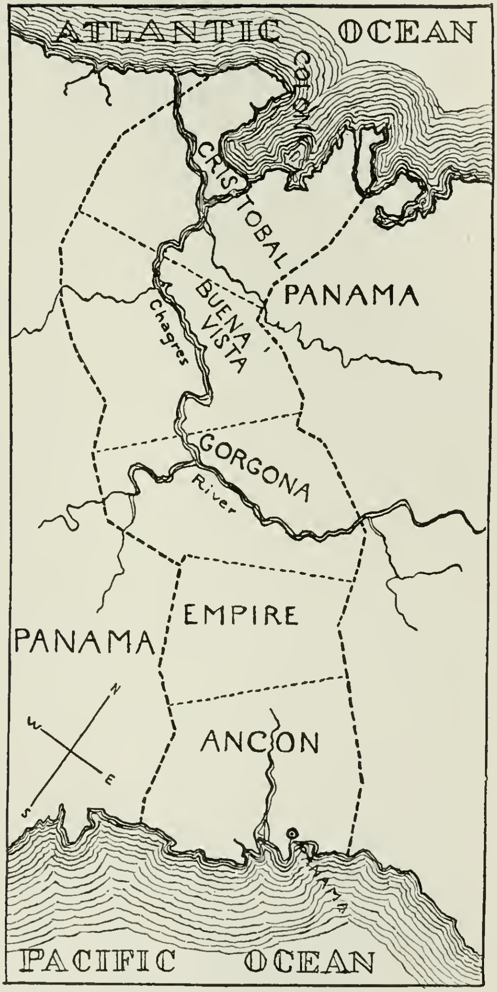
the cut were laid with railway tracks upon which loaded trains were constantly moving to carry away the stone and waste. Many steam shovels were at work loading the dirt trains. A single shovel would load 1,200 cubic yards of this material on the cars in a day of eight hours.

SCENE IN CITY OF PANAMA

Corner of Plaza, one of the attractive features of that capital

At the dumping grounds a patent unloader plowed along the platforms of the cars and cleared off 320 cubic yards from sixteen cars in seven minutes.

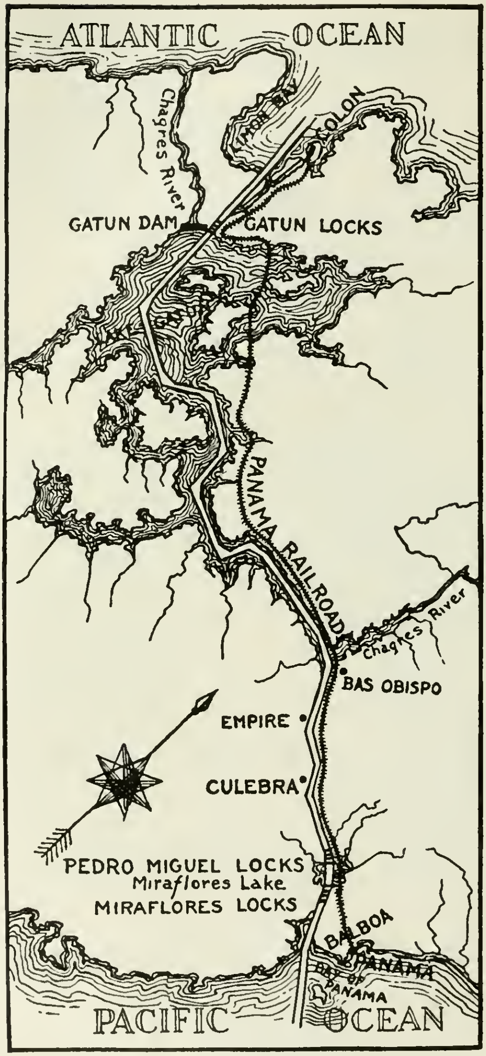
At Gorgona, near the middle of the canal, were located the machine shops, where the engines, cars, steam shovels, and varied machinery used in building the canal were kept in repair. Some of the important machines used, like the unloader, were invented here.



THE CANAL ZONE AS THE UNITED STATES RECEIVED IT

With the exception of the cities of Colon and Panama, under American control

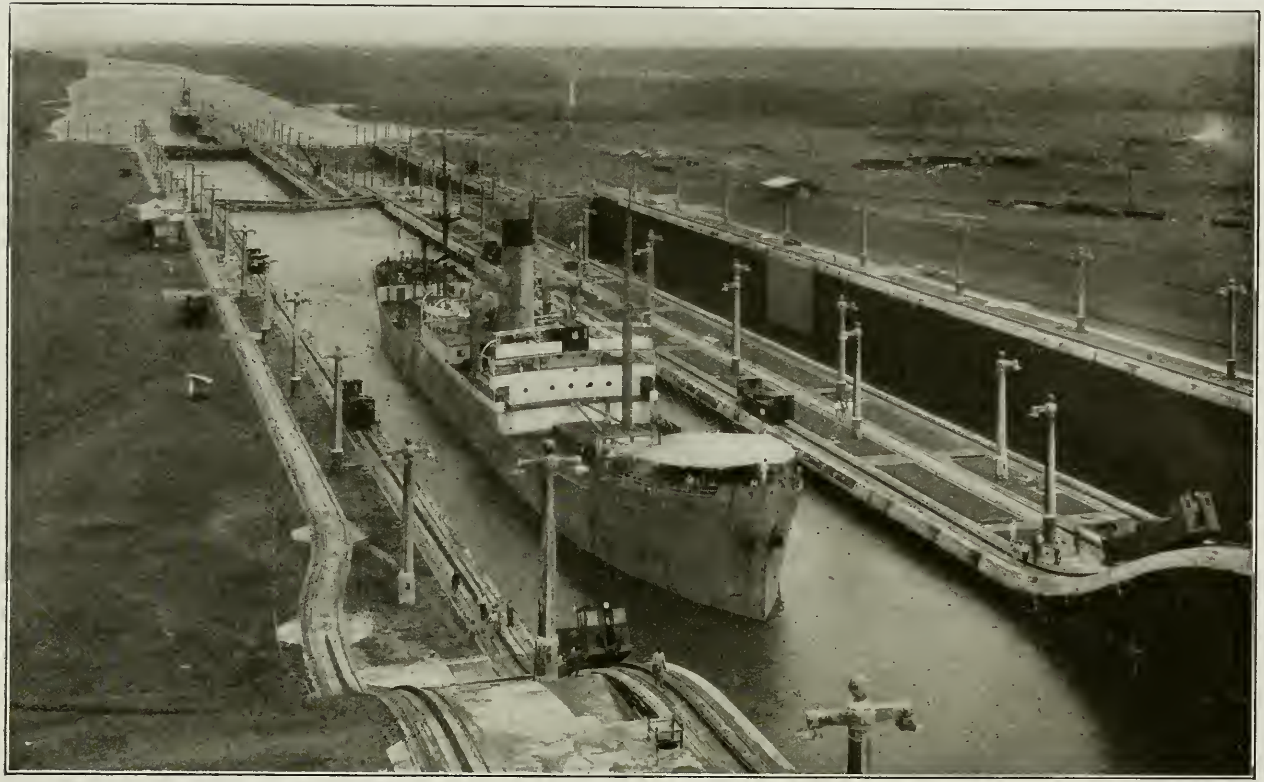
(2) The canal follows the valley of a tropical river, the Chagres, about half-way across the Isthmus. In the rainy season this river is flooded with the deluge of tropical waters, and in the dry season there is but little water. An immense dam was constructed to control the waters of this river. The dam is over 8000 feet long and its top is 105 feet above sea level. The waters impounded form Gatun Lake, which has an area of 164 square miles. A large spillway keeps the level of this lake at 85 feet above the level of the sea. The valley was full of silt and offered no rock foundation for a dam, but in the center of the dam is built a solid block



ROUTE OF CANAL AND RAILROAD

of concrete resting on piles driven below. The dam is about 2,000 feet broad and is capable of resisting great pressure. The material loaded on trains from the Culebra Cut was used to build this extensive dam.

The water above the dam stands at a level of eighty-five feet above the sea and makes the high-water level of the canal, and extends through the Culebra Cut to the locks on the south or Pacific side. This high level is the main part of the canal and is more than thirty miles in length. A deep channel, five hundred or more feet in width and forty-one or more feet in depth, was thus provided through the lake, as indicated on the map. There are many curves in this channel but they are gradual and suited to the movement of large



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GATUN LOCKS, PANAMA CANAL

vessels. Quite a number of streams pour their waters into this lake during the rainy season. In order to avoid excess of waters a spillway has been provided at the great dam at Gatun. But the lake is so large that the waters are spread out over a very large area. In order to secure a surplus of waters for the dry season it is proposed to build a reservoir in the upper valley of the Chagres River where the floods of the rainy season can be stored, at a higher level than the lake.

(3) At each end of this high level are located the double series of immense locks which now raise the large ocean vessels from sea level to the eighty-five-feet level of the upper canal. A series of three locks is required to make this lift. Each lock is 1,000 feet in length, 110 feet wide, enclosed with solid stone walls, and is supplied with a pair of huge gates at each end. A second series of locks runs parallel to the first so that two vessels can be put through the locks in the same or in opposite directions at the same time.

On the Pacific side there are also three locks which either raise or lower vessels to the desired level. On the Pacific also it is necessary to adapt the lowest lock to a difference of twenty feet between high and low tide, while on the Caribbean side there is but slight difference produced by variation in the tides. The canal follows the valley of a small river on the south side toward the Pacific.

The canal has at all points a depth of at least forty-one feet. The largest vessel now built requires, fully loaded, but thirty-seven feet. These locks are supposed to be large enough for the largest vessels likely to be built.

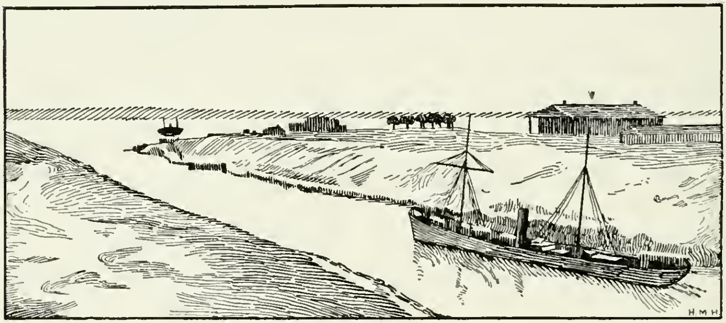
The locks at Panama are larger than any yet built in the great canals of the world. It requires about fifty minutes to pass the three locks, and the passage of a vessel through the entire canal from ocean to ocean requires about ten hours.

(4) Neither Panama nor Colon has harbors large and deep enough for large ocean-going vessels, and these must be provided. The passageways from the locks to the ocean on either side have been dredged out wide and deep enough to correspond to the rest of the canal. The heavy winds from

the north at Colon made a long breakwater necessary to protect the entrance. At Panama on the south there are no storms, and no special protection will be needed.

The lock gates are opened and closed by electric power and the vessels are hauled through the locks by electric locomotives, which run on railways at the sides of the canal. The power is generated at the Gatun dam.

5. In constructing the canal one of the main problems was to secure a sufficient number of efficient laborers. The French company had depended mostly upon West Indian negroes. At first the negroes proved unsatisfactory, but when they were better fed and managed, they improved in strength and industry. About twenty thousand negroes were employed, the best coming from Barbados and Jamaica. Later, European white laborers were also secured, Greek, Italian and Spanish. The Spanish proved the most satisfactory. About 6,000 European laborers were employed, and about 6,000 Americans, mostly skilled workmen and officials. In 1908 there were enrolled in all 31,924 men on the canal works and the railroad. As soon as the dangerous tropical diseases were overcome there was no longer serious difficulty in securing a sufficient number of laborers and officials.



ON THE SUEZ CANAL
About fifty miles from Port Said, at entrance to Lake Timsah

The general management and execution of the whole plan was directly under the control of the President of the United States, and the funds were furnished by congressional appropriation.

6. The first estimates of the cost of the canal fell far below the sum required because of the increase in the price of material and labor, and because the construction required much more labor than it was at first thought would be necessary. The total cost was about $380,000,000, making this the most expensive of the great canals of the world. The Suez Canal cost $90,000,000; Manchester Ship Canal, $75,000,000; Kiel Canal, $40,000,000.

The six other ship canals cost: Sault Ste. Marie, $9,000,000; Canadian Soo Canal, $4,000,000; Amsterdam, $10,000,000; Corinth, $5,000,000; Cronstadt, $10,000,000; Welland, $24,000,000. Total for the nine, $267,000,000.

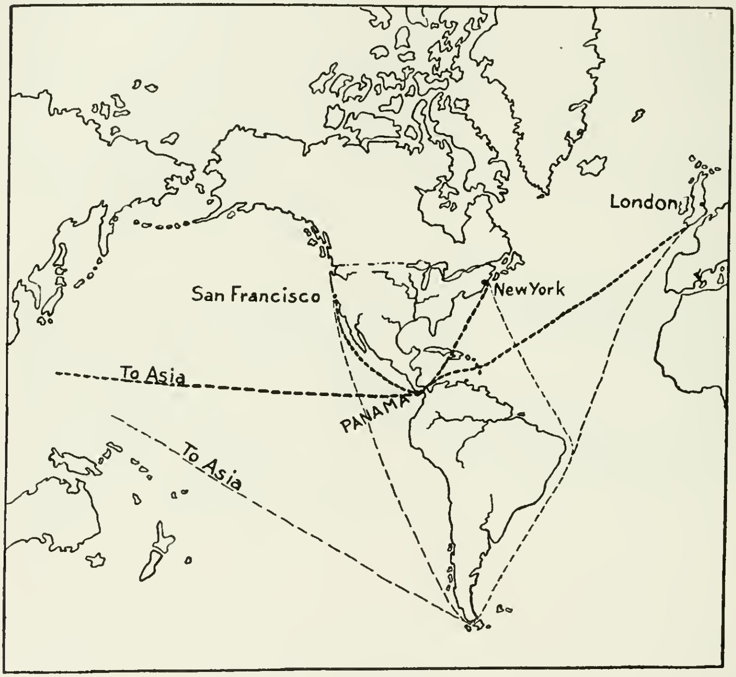
7. In the United States the Canal is regarded as a military necessity. It will enable the United States to transfer its fleets of war vessels quickly from the Atlantic to the Pacific, and vice versa. Otherwise it would be necessary to keep two strong fleets of war vessels. The famous voyage of the battleship Oregon from the Pacific to the Atlantic to share in the Spanish War was a strong object lesson for the Americans.

But for the world in general the importance of the Panama Canal is its shortening of sea routes, as shown by the following comparison of distances:

Distances from New York to San Francisco by water, former route, 13,400 miles; via Panama Canal, 5,300 miles. New York to Hawaii, former all-water route, 12,800 miles; by Canal, 7,000 miles. New York to Manila via Hawaii, former route, 17,800 miles; by Canal 12,000 miles.

The Canal brings Callao 4,320 miles nearer Liverpool by steamer, reducing the distance from 10,230 miles to 5,910 miles and saving about 14 days in time. To Valparaiso the shortening in distance is 1,813 miles, making it 7,185 instead of 8,998, and the saving in time is about 6 days. By its means the United States has an all-sea route, which is from 2,500 to 3,000 miles shorter than routes from Europe. New York, via the Canal, is 3,779 miles from Callao, instead of 9,769 as formerly, while New Orleans is only 3,264 miles from Callao.

Between New York and Yokohama the reduction is 3,729 miles, and that Japanese city is brought nearer to New York than Liverpool by 1,805 miles. Shanghai is 1,629 miles nearer to New York. Sydney, Australia, is 3,806 miles nearer to New York, and the distance between the two cities is 2,382 miles less than the distance between Sydney and Liverpool. Wellington, New Zealand, is 2,542 miles nearer New York, and the distance between them is 2,759 miles less than between Wellington and Liverpool. Between New Zealand and Europe there is an average saving of 1,600 miles.— (From United States Consular Report.)



THE CANAL SHORTENS DISTANCES
The dark lines show new routes; the light lines, former channels of trade

The products of the Mississippi Valley via New Orleans may be easily shipped to the west coast of North America and South America, and to China, Japan and the East Indies.

8. The Panama Canal is neutral and open to all navies of the world in times of war as well as times of peace. But the United States would close it to warships of a nation with which this country was at war. All ships are required to pay toll,

loaded vessels and warships at the rate of $1.20 per net ton (each 100 cubic feet) of actual earning capacity. Vessels without cargo or passengers pay 40 per cent less.

9. The United States has placed strong fortifications at each entrance of the canal and maintains a division of the regular army in the canal zone.

10. The canal zone has an area of about 460 square miles. Its government is administered by a governor who is appointed by the President of the United States, and is under the immediate direction of the Secretary of War. The government is administered under the following departments: Executive, Operation and Maintenance, Supply, Accounting, Health, Washington Office.

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34. Type Study on the Erie Canal.

Suggestions as to Method

(a) At the beginning of the study of the Erie Canal make very plain the purpose of building the canal as a means of cheap and easy transport of goods between the lake regions and New York City.

(b) Two or three kinds of maps should be employed: Sketches made by the teacher on the blackboard to show simply the location of the canal and the relation of the lake region to the seacoast and Hudson River. Second, large wall maps which show the same thing on a larger scale with reference to the whole country.

(c) Any sketches drawn by the teacher can afterward be required from the pupils on paper or on blackboard.

(d) At the close of the description of the building of the Erie Canal, make a somewhat careful map of the canal, showing the main line and the branch lines north to Lake Ontario and south to the Finger Lakes.

(e) Good pictures of the canal, canal boats and locks, as at Lockport, are needed.

(f) Study the common folder map of the New York Central Railroad and compare with the line of the Erie Canal.

(*g*) In comparing the Old National Road with the canal, make a map of that route from Baltimore through Washington to Wheeling and on to St. Louis. Compare its length and mountainous difficulties with the canal route through central New York.

(*h*) In teaching a class, follow the outline of topics which forms the basis of the treatment and make each topic clear and full, with reproductions by the children, before passing to the next topic.

(*i*) Make definite and careful comparisons of different routes and their advantages and disadvantages

(*j*) Have the children drilled upon the naming and location of cities and rivers, e. g., New York, Albany and Buffalo for the canal; Philadelphia, Harrisburg and Pittsburgh for the Pennsylvania line; Baltimore, Washington and Wheeling for the National Road.

Outline of Topics

1. The conditions in central New York following the close of the Revolution.
2. Projects for building the canal and arguments in its favor.
3. Location and size of the proposed canal.
4. Construction of the canal and its difficulties.
5. Celebrations at the completion.
6. Results.
7. Other traffic routes across the Alleghanies and comparison with the Erie Canal. The Old National Road, canals and portage road in Pennsylvania.
8. The New York Central Railroad.
9. Rebuilding and enlargement of the canal.
10. The present rebuilding of the canal on a larger scale.
11. Summary regarding traffic routes between the east and the west.
12. Comparison of Erie Canal with the Illinois and Michigan canal, the Hennepin Canal and with Ohio canals between the Ohio and Lake Erie.

ERIE CANAL

1. At the close of the American Revolution there was a strong drift of pioneer settlers to the Ohio country across the mountains. Even during the war and before, settlers

had flocked across the southern Alleghanies into Tennessee and Kentucky and had helped to win that land from the Indians and British, under such leaders as Sevier and Robertson of Tennessee, Boone of Kentucky, and George Rogers Clark.

The northwest territory by the treaty with England belonged to the colonies, and it was a very rich and inviting land for settlement, although the fierce Indian tribes of Ohio and farther west made life for the earliest settlers very dangerous.

Sullivan's expedition into the Iroquois country during the Revolution (1779) had broken up the powerful Indian confederacy which for two centuries or more had controlled central New York.

At the close of the Revolution, then, white settlers were free to push over hills, valleys, lake regions and swamps of central New York as far as Lake Erie.

Along this line from Albany to Buffalo were to be laid out the roads which would connect the east and the west. For along this route alone were no mountains to climb.

An old Indian trail ran from the Mohawk westward through this flat country. Now pioneer roads began to be built, and as the early settlers had supplies of wheat and peltries to send from the Genesee country to New York and Philadelphia, they needed cheap and easy transport.

For a time their easiest road to market was by way of Lake Ontario and the St. Lawrence to Montreal. But in the spring when the rivers were flooded they could send goods down the Susquehanna to Baltimore and Philadelphia. The valley of the Mohawk was also used for shipment of goods partly by boat and partly by wagons toward New York.

After the Revolutionary War a wagon road was built across the country from Albany to Buffalo, but it was a long and tedious haul over bad roads, through woods and swamps, so that it cost about $100 to get a ton of wares from New York to Buffalo.

2. The project of building a canal from Buffalo to Albany was early suggested. Governor Morris argued that as Lake Erie

was 570 feet higher than tide water at Albany, it would be possible to dig a channel and convey a stream that would carry boats directly to the Hudson.

DeWitt Clinton, afterward governor, was an enthusiastic advocate of such a canal, and he, with others, had surveys made and formed plans. But the undertaking was too difficult and expensive for private individuals.

Only a large state like New York could supply the money necessary for such an undertaking. Finally DeWitt Clinton presented the matter to the legislature of New York in 1816. Some of his arguments were as follows: Such a canal would greatly cheapen the transport of goods from Buffalo to New York. This would make New York City the outlet for goods coming from the lakes and the Ohio country, and in this way it would rapidly grow into a great city.

Again, New York state was fortunate in having the only route between the east and the west where there were no mountains to climb, as in Pennsylvania and other states further south. It was the only place where a canal could be built.

The shipment of goods down Lake Ontario and the St. Lawrence would only injure New York state, and besides, the St. Lawrence was blocked with ice during a long winter.

The country through which the canal would pass was a rich and fruitful region, and with a good canal for shipment it would settle up rapidly and become very prosperous.

The canal itself could be easily supplied with water from Lake Erie, and the boating along the canal would be much safer, being free from the winds and storms which prevail on the lakes and on the ocean.

A pair of horses or mules could haul a great canal boat loaded with goods along the canal at the rate of thirty miles per day, and that would be very rapid compared with any other kind of shipping. After much discussion these arguments won the day, and the legislature voted to undertake the construction of the canal at state expense.

3. The canal was to be dug along the Mohawk Valley, then across New York north of the Finger Lakes, not far south of Lake Ontario, to Buffalo.

The main canal was divided into three sections, the western part from Lake Erie to the Seneca River, the middle from Seneca River to Rome and the eastern section from Rome to the Hudson at Albany; in all, 360 miles. It was to be four feet deep, forty feet wide at the top and twenty-eight feet wide at the bottom. The sloping sides were to be walled with stone.

4. The first contracts for digging were let in the spring of 1817. The farmers along the route had been engaged to do the work, at first with spades and wheelbarrows, but this was too slow, so scrapers were invented to be used with teams of oxen. This made the work go much faster. Money was scarce among the farmers and they were glad to engage in the work to get money for their needs.

A number of serious difficulties hindered the progress of the work. First were the great forests, thick and tangled, just west of Rome. Trees must be cut down and stumps pulled. The ground was deeply matted with roots. A stump-puller was sent from England, and a great plow with two yoke of oxen was used to loosen up the roots.

In some places the canal led through swamps, and hundreds of men were sick with fever and ague. Thus for a while near the Seneca River the work almost stopped. Other stretches of the canal had to be blasted out through rock, and this was slow and laborious.

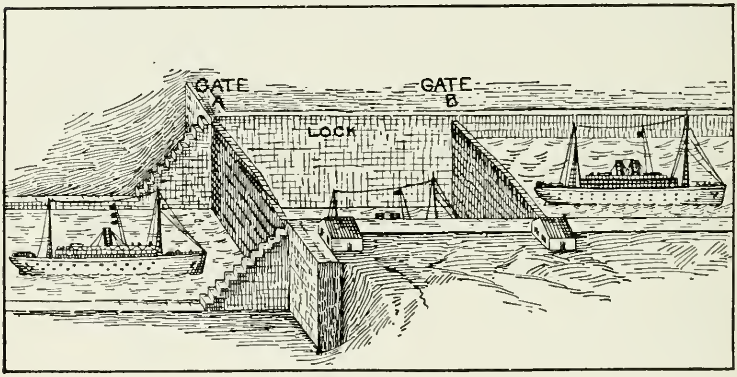
Important rivers like the Genesee had to be crossed, and this was a serious problem. Great massive stone arches were built across the valleys and streams and stone troughs or aqueducts were built upon these which formed a part of the canal. The rivers then could pass under these arches. Stone had to be hauled for building these arches and aqueducts.

The canal had to be built at several levels, on account of the hilly and sloping nature of the land in places, and had to pass from one level to another, say ten feet higher or lower.

At these places stone locks had to be built, with double gates at each end, and constructed long and wide enough to let boats pass into them so as to be raised or lowered as the water was let in or out.

Work was going on in all these sections at the same time. As fast as any considerable part of the canal was completed, the water was let in, canal boats were built and goods shipped. The charges on these shipments or toll counted up rapidly to a large sum and people began to see that the canal, when finished, would be very profitable.

5. At last the canal in all its parts was completed in 1825, being 365 miles long, having seventy-two locks and many stone aqueducts. It crosses the Mohawk River twice. Its entire cost was $7,600,000.



USUAL TYPE OF CANAL LOCK

Of course the completion of the canal was celebrated in Buffalo and New York and at all the towns and cities between. As Governor Clinton and a party of distinguished guests entered the canal at Buffalo in boats to travel to New York, a cannon was fired off, and this shot was followed by a series of cannon distributed along the whole route within hearing distance of each other. In this way the news was telegraphed to New York. All along the route they were received with speeches, feasts and jollification, and at New York, two kegs of water from Lake Erie were poured into the New York bay to signify the union of the lakes with the ocean. It was really a great event in American history, as the products of the west could find easy transport to New York and to Europe by water.

6. Important results quickly followed the completion of the canal. The whole farming country for miles back on both sides of the canal quickly grew into a rich productive region. All along the canal cities sprang up which in time have grown into large and populous centers of manufacturing. Nearly all of the large cities of New York state are located on or near this canal and the Hudson. Smaller canals were built south and north of the Erie connecting it with the lakes, and greatly increasing the trade. The success of the Erie Canal was greater than even its friends had expected. The tolls from 1825 to 1834 amounted to eight and a half millions, more than the original cost.

From the Ohio country and from all the Great Lakes region products began to flow in toward Buffalo and along the canal to Albany and New York. The eastern people desiring to move west found it easy to transport their family goods by the canal and lakes to Cleveland, Detroit and Chicago and to move out to farms in Illinois, Indiana, Michigan, etc.

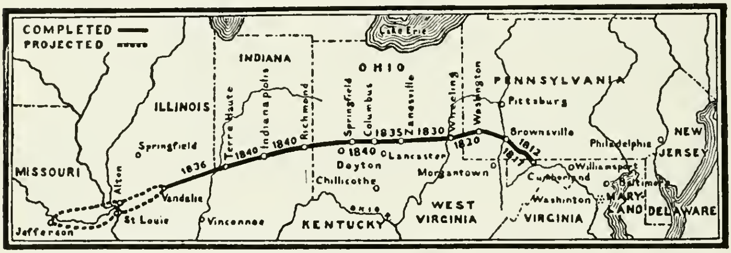
From the opening of the Erie Canal New York City began to grow and soon outdistanced all other cities in the United States in wealth and population. For some thirty years this canal was the chief highway of traffic for heavy goods between the east and the west. It was also the chief mode of travel for people and families going between the east and the west. During this period the tolls on the canal brought in a large revenue to the state.

7. Cities, like Philadelphia and Baltimore, on the eastern seaboard, were very anxious to share in the rich commerce of the west. Even before the building of the Erie Canal the government of the United States had constructed the Old National Road from Cumberland on the Potomac, across

the mountains and through southwestern Pennsylvania to Wheeling on the Ohio. This road was afterward completed across Ohio, Indiana and Illinois to St. Louis and cost the government about $7,000,000, not much less than the Erie Canal.

It was a well-built stone road as far as Wheeling, with massive stone bridges, and to this day is a good, solid highway. For many years it was thronged with wagons and emigrants and their stock and goods moving to the west, into the Ohio Valley. The old hostelries along the road are yet fine old landmarks of the day when Henry Clay and Abraham Lincoln traveled over this road by coach to Washington.

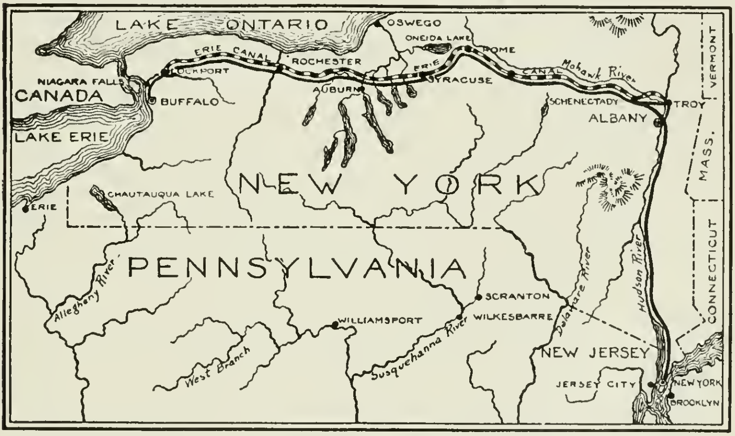
Philadelphia sought to reach the west by still another route. Canals were built by the state along the Susquehanna and up the Juniata to the edge of the mountain ridge between Johnstown and Altoona. It was intended to carry the canal through this mountain barrier by a tunnel. Another canal connected Johnstown with the Allegheny River and Pittsburgh. But the tunneling of the mountain proved too difficult, and a portage railroad was built to connect the two canals, at state expense. Another railroad was built by the state of Pennsylvania from Philadelphia to the Susquehanna, and thus Philadelphia was connected from tidewater on the Delaware with the Ohio at Pittsburgh. This became a great route of traffic between the Ohio country and Philadelphia.



THE NATIONAL ROAD

During this early period we find these three great routes competing for the traffic of the west. All of them were very important in the development of the west and in bringing about an easier interchange of products between the east and the west.

8. Between 1840 and 1850 railroads were projected and built across the Alleghanies to assist in handling the immense traffic that had grown up and to bring about a much quicker transit of goods and persons over long distances. It was only gradually and slowly that engineers and capitalists learned how to build and manage railroads. At first they were very crude and clumsy. Instead of engines they used horses and mules to draw the cars and there were no cross ties connecting the two rails. There were no stations or freight houses, no regular times for trains to start, no headlights, no sleeping cars, no telegraph.



MAP OF ERIE CANAL AND NEW YORK CENTRAL RAILROAD

Note how the railway parallels the canal

The New York Central Railroad was built parallel to the Erie Canal between Albany and Buffalo and on down the Hudson to New York. When this railroad connection was completed, goods and persons could be transported much more rapidly, and a large share of the trade was transferred to the railroad. But so great was the volume of trade that both canal and railroad were kept busy. Freight rates on the canal were so much cheaper for heavy produce that for grain and farm products it was much better to use the canal. The cheap rates on the canal kept down the railroad rates.

9. In the early years the canal was so successful that people began talking of enlarging it. By making it deeper and wider, larger canal boats could be used and transport would be cheaper.

In 1835 it was decided to enlarge the canal, making it seventy feet wide at the top and seven feet deep, and at the same time larger double locks were to be constructed. This was a costly undertaking, and its working out was not completed until 1862. This great improvement cost fifteen millions of dollars, just twice the original cost of the canal.

The competition between the canal owned by the state and the railroads owned by private corporations continued. The New York Central built double tracks across the state and later what amounts to four tracks, so vast was the volume of business with the west. Other railroads across New York to Buffalo, as the Lehigh and Lackawanna, were built, and there was plenty of freight for all.

10. Finally to enable the Erie Canal to compete better with the railroads for the western trade, a second and much greater rebuilding and enlargement of the canal was talked about. The great railroad systems must not be allowed to gain a monopoly of trade and fix freight rates.

There was a hot political campaign in New York state while Roosevelt was governor and at the end it was decided by a large majority of the voters of the state to spend one hundred million dollars for enlarging the Erie Canal. This really meant the building of a new and much larger canal.

The course of the canal was considerably changed; the Mohawk River was to be deepened and canalized and pools formed by means of locks. The work was nearly completed in 1916. The enlarged canal is 125 feet wide at the top, twelve feet deep and able to float barges carrying 1,000 tons of freight. The locks are large enough to pass two of these barges at once. Special attention has also been given the terminal facilities at Buffalo, New York City and other points, so that freight can be handled quickly. These improvements have made the Erie Canal, which, with its connecting waterway, is now known as the New York State Barge Canal System, one of the most important canals in the world. By furnishing cheap transportation to the seaboard for western products, it compels the railroads to keep their rates low as well.

11. A comparison of the road-building and canal-building across Pennsylvania to connect with Pittsburgh and Wheeling and across New York to connect with Buffalo will make it plain that the people of the United States have spent vast sums of money in the effort to bring about easy and rapid communication and transport between the Ohio and lake states on the one side and the Atlantic seaboard cities on the other. The great traffic routes in the United States have been built from east to west, often across the mountains, not north and south parallel with the mountains.

12. Just as in the east canals were built across New York to connect with the western lakes, so in Illinois a canal was constructed later, 1848, from Chicago on Lake Michigan down the Illinois River so as to unite the Mississippi River and the lakes. Several such canals were also built across Ohio to connect Lake Erie with the Ohio, and across Indiana to the Wabash.

In recent years a strong effort has been made in Illinois to build a much greater canal from Chicago and down the Illinois, so as to secure great barge traffic between Chicago and the Gulf, also from Pittsburgh and from St. Paul down to the Gulf.

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35. Type Study on Voyage from New York to London

Suggestions as to Method

(*a*) A number of larger and smaller maps are needed to trace out this journey, e. g., a detailed map of New York Harbor; a large map showing America, Europe and the Atlantic. On this or on the blackboard mark out the course of a steamer bound from New York to London. A detailed map of the southern coast of England and of the route around the southeastern coast and up the Thames. A map of London would help.

(*b*) From the office of some steamship company get pictures and diagrams of an ocean liner, showing the arrangement of dining-rooms, staterooms and decks.

(*c*) In comparing the different routes of steamers plying between New York and different parts of Europe, study some good commercial map showing the chief routes of ocean ship lines.

(*d*) Notice that the ports of the Baltic send the Germans and northern emigrants to the United States, while the ports of the Mediterranean send Italians, Greeks, etc.

(*e*) Observe on the maps that the European states lie farther north than our states. London, for example, is as far north as Hudson Bay.

(*f*) Work out the topics as numbered one at a time and master them.

(*g*) Such a story with the outlines of topics forms a good basis for written language lessons.

Outline of Topics

1. The ship on which we sail.
2. Getting out of New York harbor.
3. First sight of the ocean, and seasickness.
4. Northeast course across the Banks.
5. In mid-ocean. Storms.
6. The Scilly Islands.
7. Land's End and signal station. Cornwall.

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STEAMSHIP MAJESTIC

8. Along the English coast. Plymouth; Beechy Head; Southampton; the Chalk Cliffs; Albion; Dover; France; the Channel.

9. Around North Foreland; past Margate and Sheerness.

10. The mouth of the Thames.

11. The harbor of London.

12. Other routes to Europe; New York via Gibraltar to Naples; New York to Glasgow; Montreal to Liverpool; New York to Charleston and Jacksonville; San Francisco to Yokohama, etc.

A STEAMBOAT VOYAGE FROM NEW YORK TO LONDON

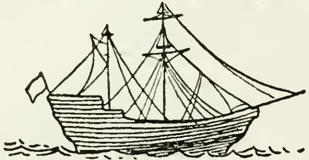
1. One's first steamship voyage across the Atlantic is full of new and unexpected sights.

The docks of the large and commodious ocean liners are along the east bank of the Hudson River in New York. Here lies the huge iron hull of the steamship whose powerful engines are to carry us steadily through storm and calm across the Atlantic.

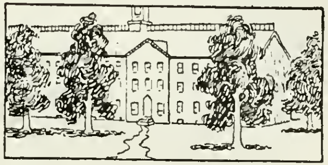
Our trunks having been sent on board we march up the gangway across the side of the ship and land on the deck, where hundreds of passengers and their friends are saying good-bye. If we have taken a first-class passage, our large comfortable stateroom is soon found and our parcels are stowed away. A stateroom, however, is not large as compared with our bedroom at home. If we prefer a second-class passage, which is very comfortable on most great vessels, the stateroom will be still smaller, somewhat plain, and with two bunks, one just above the other.

2. Finally we feel the vessel moving, and we hasten up the stairs on deck to see the sights of the harbor; and of the great bay through which we move southward toward the Narrows, or entrance to the ocean. As our vessel swings round with its prow to the south, one must be alert to catch all the remarkable sights which pass in review. To the left is lower New York with its clusters of towering sky-scrapers. On the right are Jersey City and Hoboken. The shores on

NEW YORK.



THE "HALF MOON" ANCHORED IN NEW YORK BAY IN 1609.



-KINGS COLLEGE (COLUMBIA) FOUNDED 1754-

-OUTLINE-

SETTLEMENT-1613
AUTHORITY-DUTCH W. I CO.
COLONISTS-WALLOONS
GOVERNMENT-PATROON
GROWTH-SLOW BUT STEADY
OCCUPATION-FARMING COMMERCE
PRODUCTS-THE CEREALS
CITIZENSHIP-PROPERTY QUALIFICATIONS
EVENTS

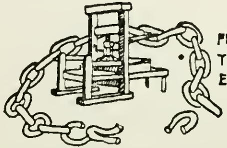
OLD NEW YORK HOUSE-BUILT 1668-

OLD DUTCH WINDMILL

·CLAIMANTS·

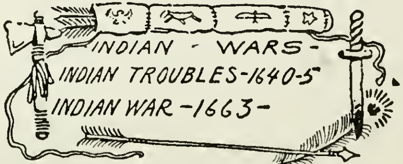
DUTCH·
- BASIS
- GOVERNMENT
- EDUCATION
- RELIGION

ENGLISH
- BASIS
- CONQUESTS
- CHANGES



FREEDOM OF THE PRESS EST. 1734.

SIR WM. KIDD-PIRATE -1697-9-



INDIAN - WARS-
INDIAN TROUBLES-1640-5
INDIAN WAR-1663-

both sides of the Hudson are lined with docks where ships from many lands lie at anchor. The great, bulky ferryboats which move rapidly back and forth across the Hudson, carrying thousands of passengers hourly between New York and the Jersey shore, are seen crossing our path. A small steam tug is drawing a whole cluster of canal boats down stream. The smaller wooden sail vessels and schooners move up and down the river. To the right comes into view the towering Statue of Liberty, and on the left are Castle Garden and Governor's Island, an old-fashioned stone fortress. Looking back and up the East River we see the mighty span of the Brooklyn bridge, and Brooklyn itself, a vast city with docks, shipping and warehouses.

As our steamer moves down the bay, an in-coming ocean liner from Hamburg, with decks crowded with passengers and immigrants from foreign lands, passes us. The people are looking with eager faces for the first time upon the new land where they have come to seek a better fortune.

Approaching the Narrows, with Staten Island on the west and Long Island on the east, we pass under the guns of two frowning forts. This narrow entrance to the harbor and vast wealth of New York is protected on both sides by heavy defenses. Moving out into the spacious outer harbor we look south to the low, flat shore of Sandy Hook, where stands a lighthouse to throw its bright illumination in all directions for the guidance of ships. This broad entrance way has been dredged out forty feet deep and about 2,000 feet wide, so that the largest ocean vessels can enter easily and safely.

3. And now we catch a glimpse of the far-stretching ocean, with its blue waves tossed into whitecaps. The salt breeze plays across the deck, and one begins to feel that enlargement of mind that comes with the view of vast things. On our left is the south shore of Long Island with the famous amusement resorts of Rockaway Beach and Coney Island.

Our ship begins to respond to the swell of the ocean, and we wonder how long it will be before we shall know what it is to be seasick. It is dinner time and we go down the fine staircase to the large, sumptuous dining-room which is furnished as well as the best hotels on land. After dinner we come on deck, the lights along the shore fade away in the distance, our ship goes plowing its way out into the ocean, and we are now abroad upon the Atlantic.

A feeling of unrest comes on, the first sign of seasickness, and we are fortunate if we can lie down in our bunk in the stateroom and by keeping quiet remain comfortable. Seasickness is a most miserable feeling of nausea and unrest, and may last for two or three days. If the weather is bad and a person has a weak stomach, it may last the whole voyage.

4. Our ship moves toward the northeast, far out of sight of land, and comes in a day or two to the fog banks of Newfoundland. When the steamer enters one of these fogs its engines slow up to half speed both night and day. At short intervals the steamer's whistle blows to warn approaching vessels, so as to avoid collisions. A friend of ours was on a vessel bound for England, which was going at full speed through the fog (contrary to orders), when an iceberg loomed up directly in front. The ship was going at such a speed that it could not stop and crashed into the solid ice, smashing in the prow and disabling the ship.

It is along the cold, foggy banks of Newfoundland that the cod-fishing schooners remain for weeks and months, filling their holds with the catch ot cod so numerous in these shallow waters. One of the dangers of the cod-fishers' life is that of being run down and disabled by an ocean steamer in the fogs, for these banks lie in the line of American vessels bound for the ports of northern Europe. Kipling's story of *Captains Courageous* illustrates the dangers of fishermen's lives on the Banks.

5. Sailing beyond the Newfoundland coast our vessel approaches mid-ocean. Here we feel the heavy, regular swell of the sea. During this part of the voyage but few ships are seen, while in the earlier part of the journey several may be in sight at the same time. It is better, if storms

must come, to experience them in mid-ocean where land is far away. But in heavy storms the doors and hatchways are closely shut down. At the storm's height, the seas roll over the deck of the vessel with a great rush of waters. We lay in our berths two whole days and nights waiting for the storm to subside.

At meal time, when we sit down at the dining-room table, the swaying and pitching of the ship sets the dishes rattling. In fact they must be stuck into little pigeon holes, where they cannot fall out. A plate of soup is apt to flow in any direction.

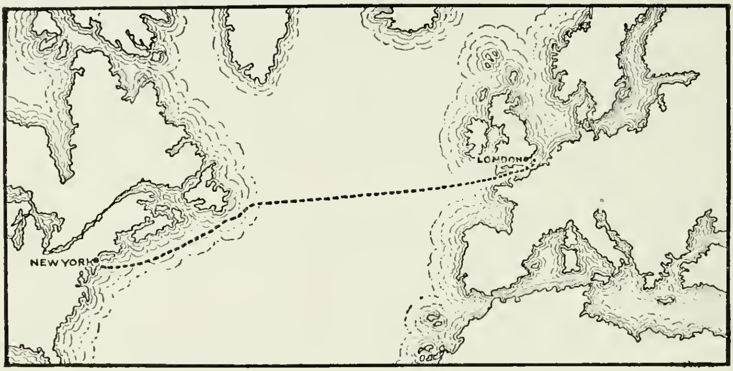
When the waves abate so that we can mount the deck we stand at the ship's rail and look out on the heaving waste of waters. Especially if one is a little seasick, it is a dismal sight. But the storm slowly quiets down, the sun reappears, and the wide expanse of ocean becomes peaceful. But in mid-ocean the sea seldom is perfectly calm. It generally has a quiet swell and movement.

6. One morning at early daybreak, having come early on deck, we looked out to the left, and there, at the surface of the ocean, lay a cluster of rocky islets. They are the first sentinels to suggest the continent of Europe. These islands, situated in an ocean swept by warm currents, have a mild, moist climate and cultivate early vegetables for the London market. On this group, known as the Scilly Islands, Benjamin Franklin describes how his sailing vessel was well-nigh wrecked, and how the frightened sailors fell to their prayers and made vows for their safety. Franklin remarked dryly that if he were to make any vow it would be to build a lighthouse there to protect and warn future sailors. As we approach the English channel numerous ships come into sight.

7. As the rocky point of Land's End slowly rises into view, we strain our eyes to catch the first glimpse of England. The ship steams slowly along the steep, rocky shore not more than a mile away, and we notice upon the steep shore the signal station whence the news was flashed back to

America that our ship had safely arrived. As our ship moves along this southern shore of England, the mountains of Cornwall are seen a dozen or more miles away in the background, and as the land slopes upward toward the foot of the mountains we can distinctly see each small field, meadow, or cultivated patch, and the clean-cut hedgerows separating them. It is a most charming picture of rural England, with its clusters of trees and hamlets and fields, as distinctly traced as on a map, but clothed in all the green and yellow and gray of a fall landscape.

8. The coast makes a great bend inward to the north, and we seem to see miles away where Plymouth lies, where the Puritans in the Mayflower said their last farewell to England.



STEAMSHIP ROUTE FROM NEW YORK TO LONDON

Our ship moves all day along this changing and interesting coast. At Beechy Head, a bold forest-covered promontory, we see one of the spots where lookouts were placed to give notice inland by signal fires of the approach of the Spanish Armada.

Our ship runs in between the Isle of Wight and the mainland and passes up to the outer harbor of Southampton. A small vessel comes out to meet us and receives a few passengers from our ship who are en route for London. Many American vessels unload supplies of fresh meat at Southampton for the London market. This saves the long delay of shipping around the east coast of England and up the Thames.

As our ship passes farther along the Isle of Wight we have a fine view of the park-like grounds and forests which surround Osbourne House, one of the palaces in which Queen Victoria lived much, and which belongs to the royal family.

Before reaching Dover we pass the long line of steep chalk cliffs which gave England, in its distant past, the name of Albion.

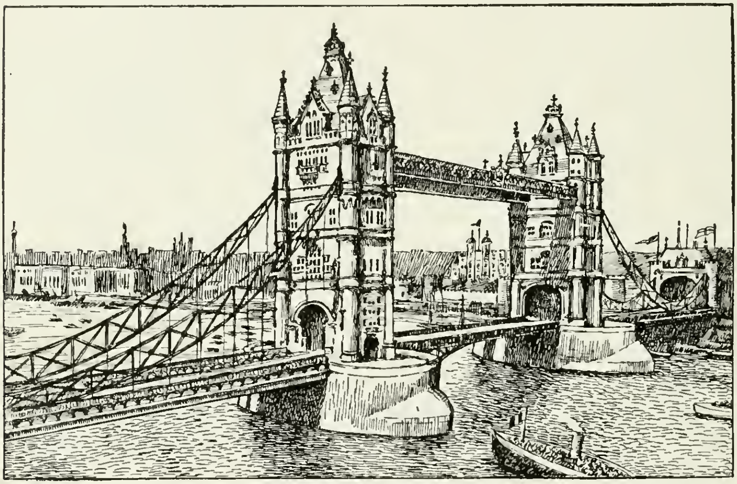
At Dover we sail close to the town, which lies near the water's edge. At the foot of the near-by bluffs, and just back of the town, on a high promontory overlooking the sea, stands an old castle with heavy walls and battlements. If the day is clear we can dimly see, far away to the south, the low-lying coast of France. For this is the narrowest part of the channel where travelers cross over to France.

9. Coming out of the English Channel we find ourselves passing along the edge of the North Sea, or German Ocean. The water is very quiet and smooth and there is no ocean swell as on the Atlantic. We pass South Foreland, a cape pushing itself towards France, then the Goodwin Sands are rounded. This is the shallows at the entrance of the Strait of Dover, from the north.

The North Sea is shallow, and is, like the banks of Newfoundland, frequented by fleets of fishing schooners.

10. As we approach the mouth of the Thames it adds interest to the event to remember that it is the greatest stream in England although only about 215 miles long. At its mouth the river looks like a large bay jutting into the land from the sea, for it is eighteen miles across. In passing up the English Channel we noted the hundreds of naval and merchant craft. There are no fewer as we steam into the river, but there are not so many great ocean liners. We had read that a vessel arrives at the port of London every ten minutes, and the statement is not hard to believe.

11. In going up the Thames the vessel moves best with the inflowing tide, and for miles passes along one of the world's busiest water fronts. Great vessels are approaching their docks; others are getting ready to leave on the next outrushing tide; others are loading or unloading. There are many great interior harbors, which have been excavated back from the river, where there can be no disturbance from constantly-moving water craft. It is impossible for passengers on our ship to determine where the harbor of London begins, but we are told, in answer to inquiries, that the London docks extend along thirty-five miles of the river, from the Tower Bridge to Tillbury Dock. The large ocean vessels have their European terminals near Tillbury, so we have to leave our good ship miles from that famous Tower which we are determined to visit on one of our earliest excursions afoot.



TOWER BRIDGE, LONDON

12. There are several important lines of steamers that ply between New York and Liverpool and follow about the same course across the Atlantic. But instead of passing the English Channel they go north into the Irish Sea and land

their passengers at the floating docks of Liverpool. These docks rise and fall with the tide, which goes as high as thirty feet and more twice a day. Liverpool is about as important a shipping point as Hamburg. Ships from the British possessions and from other regions find their way to Liverpool and London.

Still another common route for ocean travelers is from New York around the north of Ireland to Glasgow. These vessels sail up the Clyde River to the large docks of Glasgow, as we went up the Thames to London. Along the Clyde are the greatest ship-building yards of the world, and the frames of many huge steel ships can be seen along the shore like so many mighty skeletons. Many Americans love to spend a summer among the lakes and mountains, the old castles and famous historic cities of Scotland.

Another route that many Americans take to Europe leads from New York across the Atlantic farther south through warmer seas, to the Canary Islands and then through the Strait of Gibraltar and across the western Mediterranean Sea to Naples in Italy. Naples is the great seaport of Italy. Many thousands of Italian emigrants take ship at Naples for the voyage to New York and New Orleans. Americans sailing to this port visit Naples and Vesuvius, Rome, Florence and Venice and then travel across the Alps to Switzerland and Germany.

REFERENCES. Advertisements of steamship companies.

Baedeker's Guides to England, Germany and other European countries.

Larger Types of American Geography. Topic on New York City. McMurry. Macmillan Co.

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36. Type Study on Yellowstone Park

Suggestions as to Method

(*a*) This is a topic which requires great variety of pictorial illustration, including scenes in color. The books and advertisements of this region of wonders are well supplied with graphic views. Stereographic views and lantern slides, if obtainable, are the best of illustrative materials.

(b) Good maps of the Yellowstone Park are found in the books and tourist guides. Each child should make a good map of the park and locate the striking features.

(c) The policy of governmental ownership and supervision of this and other park regions is worthy of special note. The government here sets a standard for tourist behavior and etiquette which is worthy of imitation.

(d) The comparison with other interesting mountain parks will help to bring out more clearly the special features of this region and others. Locate definitely other scenic regions.

(e) This topic is strongly scientific and geological and makes a strong appeal to the imagination in several ways. Some interesting problems are brought to light and are pretty sure to arouse the curious inquiry of children as to the causes of geysers and the history of strata in the earth's crust.

(f) Other national parks of special interest to tourists are Glacier National Park, Montana; Yosemite National Park, and General Grant National Park, in California; Mt. Ranier National Park, Washington; Crater Lake National Park, Oregon; Rocky Mountain National Park, Colorado.

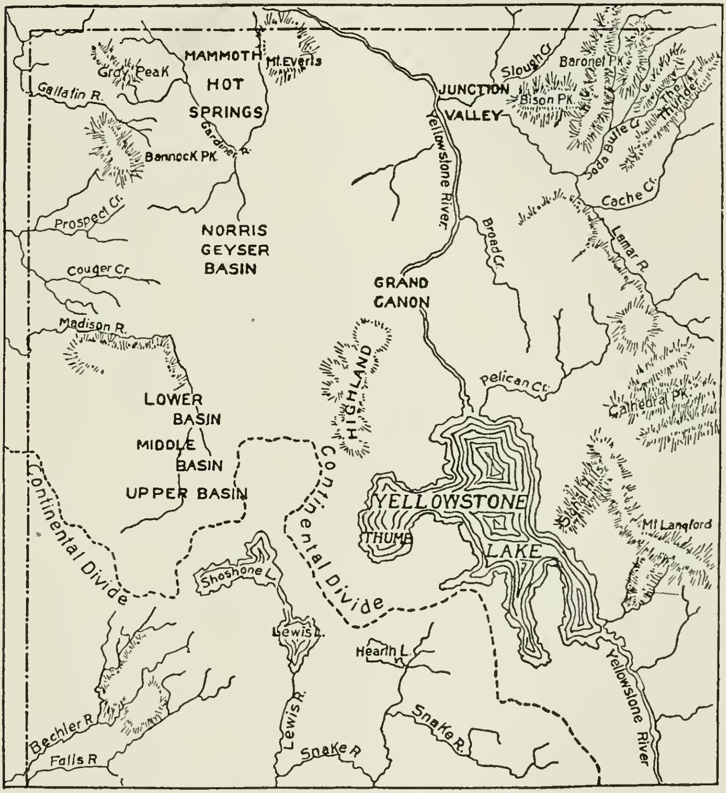
Outline of Topics

1. General physical features.
2. Mammoth Hot Springs Terrace.
3. The geysers. Old Faithful, Grand Geyser, Excelsior.
4. Mud geysers and pools.
5. Hot springs and geysers in other states and countries.
6. Petrified forests.
7. Yellowstone Lake.
8. The Grand Canyon of the Yellowstone.
9. The Continental Divide.
10. The forest and game preserves.
11. Fort Yellowstone and patrolling the park.
12. Tourists in the park.
13. Other mountain parks in the United States.

YELLOWSTONE PARK

1. The Yellowstone Park is a region in the Rocky Mountains about the sources of the Missouri, Snake and Yellowstone rivers. It is fifty-five miles wide and sixty-five miles long.

The whole region is full of natural curiosities. Its general surface is a high plateau, averaging about 8,500 feet in height, surrounded by lofty, inaccessible mountains from 10,000 to 12,000 feet high, covered with snow during the whole year. On the north and east sides is the Absaroka Range; across the southwest extends the Continental Divide of the Rocky Mountains, and along the northwest is the Gallatin Range.



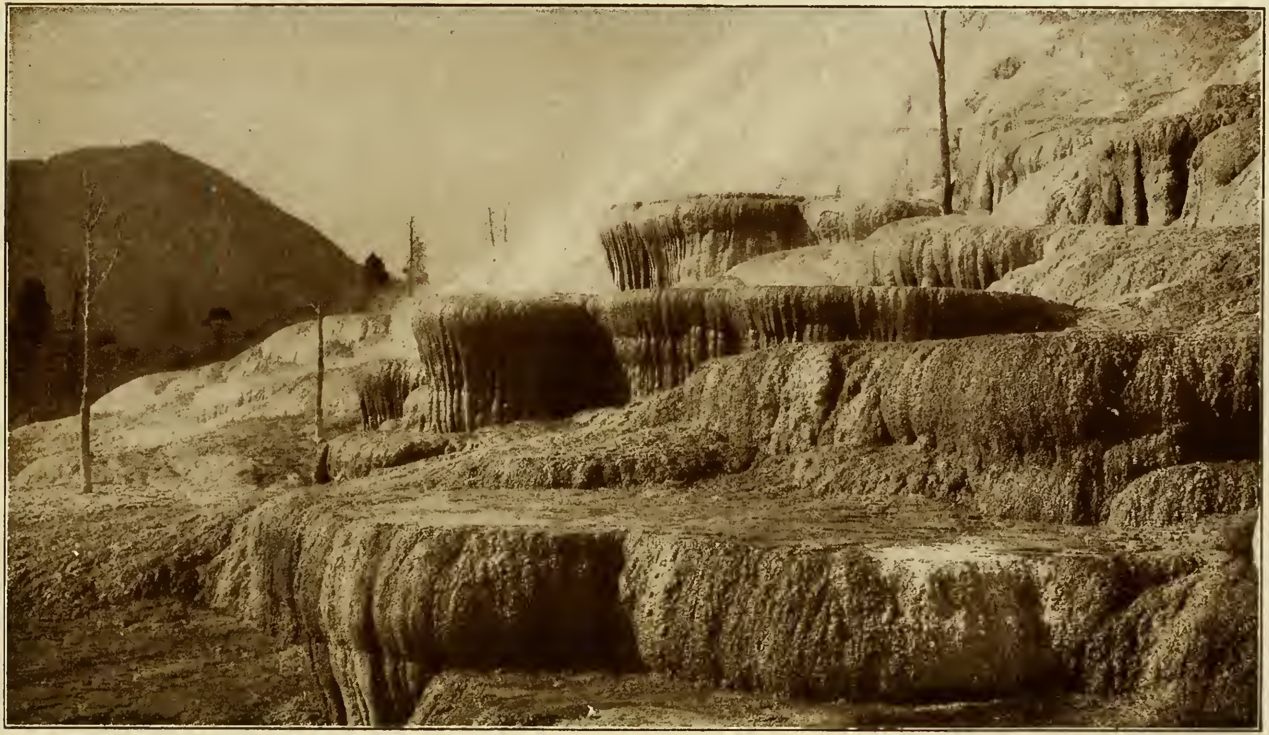
MAP OF YELLOWSTONE PARK

We read marvelous accounts of this region by the early explorers of the Rockies during the middle of the nineteenth century. A number of parties made trips through what is now Yellowstone Park. These trips were made mostly on horseback. These men feared that the beauties and wonders of natural scenery would soon be marred or claimed by fortune-seekers, and so the whole nation be robbed of what rightly belonged to all the people. Largely through the efforts of Dr. F. V. Hayden, who accompanied one of these exploring parties, Congress was persuaded to pass a bill setting aside this region as a pleasure ground for the people. The bill was passed in March, 1872.

Ages ago there were a number of active volcanoes in this region which poured forth great floods of lava for innumerable ages, filling in the lower parts, and making the central part of the park the high plateau which we now find it. Although these volcanoes have become extinct, and their burning craters have been displaced in many places by sparkling lakes, the volcanic force still shows itself in various other forms.

2. About the first of these to attract the traveler's attention is the Mammoth Hot Springs Terrace. It is near the northern border of the park. This is a mountain covering two hundred acres which has for centuries been slowly built up by the agency of hot water. Its sides are built in terraces which are snow white and have been described as staircases of Carrara marble. The hot underground waters, forcing their way through the calcareous rocks, dissolve some of the lime, which is carried in solution to the surface. This lime deposit is again solidified by evaporation and left in thin layers on the surface. It is said that they are built up at the rate of about one inch in sixty days. Thus through the centuries these beautiful terraces have been slowly brought to their present form.

The lower terraces are dead springs, but near the top of the hill there is a pool of hot water at the top of each terrace, clear as a diamond. The rims of the pools have the appearance of delicate lace, but are firm as marble. The water flows softly over the edges of these pools and trickles silently down the sides of the terraces. This water is of all degrees of temperature, from boiling water in those near the top to



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MAMMOTH HOT SPRINGS, YELLOWSTONE PARK

cool spring water at the bottom. In places the coloring is marvelously beautiful. The rays of the sun shining on the rocks are reflected, some places in streaks of richest orange and red, or of dainty pink or creamy yellow. This against the background of dead white makes a sight long to be remembered. The different coloring is due to other mineral deposits than lime which were left by the evaporating water.

Hot springs are found in large numbers in the geyser basins and in other localities throughout the park. Many of these are quiescent pools whose great depths reflect a remarkable coloring. The water never reaches the boiling point, and the steam rises from a surface unruffled except when stirred by a breeze. The most beautiful of all these springs is the Morning Glory in the Upper Geyser Basin, a perfect representation on an immense scale of the beautiful flower for which it is named. In the Midway Basin are Prismatic Lake and Turquoise Pool, the largest springs of this sort in the park. The former gives a perfect display of all the colors of the rainbow, while the latter reflects the blue of the turquoise. The rims around these springs are often very beautiful and are formed of a vegetable growth which has been covered with a mineral deposit from the water.

In Biscuit Basin we find Sapphire Pool, whose waters reflect the deep blue of the sapphire. In the Black Sand Basin is Emerald Pool, which many consider the finest quiescent spring in the park. Its color rivals that of the purest emerald. But what is perhaps the most curious of all about these colors is that they are all formed by reflection of light. The water in these springs is perfectly clear, and no cause for the beautiful display of colors can be attributed to it.

Boiling springs have water of a higher temperature, and the surface is often in violent motion. They resemble enormous caldrons set in the ground, but occasionally one builds up a rim two or three feet high. The Punch Bowl is a boiling spring which received its name from the high cup it has built to a height of over three feet, and beautifully colored. North of Norris Geyser Basin there is a large shallow pool called the

"Devil's Frying Pan." It is a reproduction on a large scale of the appearance of an ordinary frying pan. All over the surface the water is bubbling and sputtering like hot fat.

Another peculiar feature of this region is the steam vent. This is usually a crevice in the rock from which steam issues with such force as to produce a roaring that can be heard for some distance. Roaring Mountain, near the Frying Pan, is a hill containing a number of these vents, the roar of which can be heard for more than a mile.

3. One of the most interesting features of the Park is its geysers. One of these geysers — "Old Faithful"— is in the Upper Geyser Basin, near Firehole River, a tributary of the Madison River. When not in action, Old Faithful is merely a sort of crater — a hole in the ground about six feet in diameter, but at intervals of seventy minutes out of this crater, with a short preliminary roar, bursts a stream of water and steam to a height of 180 feet. This dazzling pillar of rising and falling water lasts for about seven minutes, when it seems to sink back into the earth and all is quiet as before the eruption. It is estimated that in one eruption as much as 1,500,000 gallons of water is thrown into the air, and in one day over 33 million gallons from Old Faithful alone.

This geyser gets its name from the regularity of its eruptions, which occur almost precisely at intervals of seventy minutes, most of the other geysers in the park being irregular. So with a little patience the tourist can wait and see this glorious sight without disappointment, while at others he might wait for hours and then not see the eruption.

Not far from Old Faithful is Grand Geyser. This is much larger than Old Faithful but plays at intervals of thirty-two hours. The display is grand beyond description. Without any warning, a column of water eight feet in diameter is thrown to a height of two hundred feet, returning to the basin in millions of prismatic drops. This continues for about fifteen minutes with a sound compared to the sound of a battle charge. The steam pours out in immense masses, rising in clouds to the height of one thousand feet or more.

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OLD FAITHFUL, YELLOWSTONE PARK

At the northern entrance of the Upper Geyser Basin we find the Riverside, the Grotto and the Grand. The Grotto has a peculiar crater which gives it its name. The Riverside throws a column of water eighty feet high, and has an eruption regularly once in eight hours. But greater than any of these and one of the grandest geysers in the world is the Giant. The eruptions are irregular so that visitors may wait for days without seeing one. This geyser is rightly named if the power manifest in its eruptions is considered. It throws a column of water five feet in diameter to the height of two hundred feet and the eruption continues for an hour and a half. Can one imagine the power necessary to produce such a result? Across the river and to the south of the Giant is the Castle, which takes its name from the close resemblance to an ancient castle. This geyser has the most imposing crater in the park.

Altogether there are known to be fifty of these geysers in the park. They are located in groups in certain parts of the park called basins. These basins are places where the crust is thinnest. Scattered here and there over the ground are vents through which steam and boiling water escape. This leaves on the surface a sediment of lime or silica, which is dissolved from underground rocks by the hot water. The crust is hot and often quivers as one walks over it. The air has a sulphurous odor, and scattered thickly over the basin are vats of boiling water and geysers of all heights from the "Baby" geyser of only a few feet to those two hundred feet high.

4. Sometimes in those basins among the geysers and boiling pools are pools that contain boiling mud. In the Upper Basin is one of the highest of these, the Mammoth Paint Pot. Around a circular space about fifty feet in diameter is a bank about five feet high. Within this bank is a mixture of soft clay and bubbling slime resembling soft mush. The mud is of many colors — some places black, some brown, yellow, red, or even white, due to the mineral ingredients of the soil. Though the Mammoth Springs and Geysers impress us with their grandeur, we find nothing grand about the Mammoth Paint Pot.

We should not lead the reader in this imaginary journey through the park without pausing here to call attention to the general appearance of the landscape in the geyser basins. The solids held in solution are deposited as the water evaporates, forming incrustations around the craters of the geysers, whose beauty of design can never be reproduced by the most gifted sculptor. The crater of the Oblong is in this respect one of the wonders of the park, for its beauty is enhanced by a rare combination of colors harmoniously blended. The crater of each geyser is decorated on a different plan so that no two are alike in color or design. It would seem that a hundred unseen sculptors, each without knowledge of the others, had worked out the most beautiful design he could create. Yet, notwithstanding this variety, the scheme as a whole seems harmonious. The surface of these basins is covered with this formation so that from a distance it appears like a landscape under a mantle of freshly fallen snow. But on nearer approach we find a variety of colors corresponding to those around the craters, but in more subdued tones. On close inspection we find this landscape an object of rare interest.

Except where now and then a lone tree rears its head on the banks of a stream, the geyser basins are practically devoid of vegetation. In the early morning one in the Upper Geyser Basin may look upon an expanse of white, from which arise innumerable columns of steam like the smoke from as many camp fires. It is a weird yet a beautiful sight. If the visitor is superstitious he can easily imagine that he is near the entrance to the Plutonion regions, and it is no wonder that the Indians shunned the place as the abode of evil spirits. This is probably the chief reason why no account of the geysers reached civilization for so many years. The Indians frequented neighboring localities, and during the trouble between the Nez Perces and the government it was unsafe for tourists to visit the park. With the settlement of this dispute all danger was removed, and since 1878 the park has been a safe and enchanting pleasure ground, and it is visited by increasing numbers each year.

There are smaller basins which seem to contain nothing but the mud springs, and some which throw out great quantities of mud. These are mud geysers. There are over five hundred of the mud springs in the park, and everywhere we find the different coloring. Some are filled with black mud, others brown, some red or pink, while in a few the mud is of snowy whiteness, due to the decomposition of silica from hot springs. One of these basins is near the Norris Geyser Basin, another near the west bank of the Yellowstone River a few miles below Yellowstone Lake, while a third is farther east near the Pelican Creek. One of the largest of the mud geysers is in the midst of a beautiful little valley near the central part of the park, Hayden Valley. The geyser has a crater forty feet deep and six feet in diameter, nearly full of the bubbling mud. As one watches it, the mud disappears down in the crater. Then in a few minutes gurgling noises are heard which seem to come from hundreds of feet down in the earth and the boiling mass comes back to view.

The mud springs are supposed to have begun as geysers and clear hot springs, ages ago. The water grew gradually thicker and thicker through the mineral matter which was dissolved from the rocks by the hot water, until now they are of the consistency of thick paint or mush. This thickening process will probably continue until the heat dies out and the boiling mud will become solid rock.

5. The Yellowstone Park is the only region of the United States which contains geysers, but there are several regions which contain hot springs. The most notable of these are the Hot Springs in Arkansas. Here, on the west slope of Hot Springs Mountain, are seventy-three of these springs, ranging in temperature from 76 degrees to 157 degrees, and discharging, on an average, 500,000 gallons of water a day. These springs, on account of the mineral matter they contain, are used for remedial purposes.

Other hot springs are at Saratoga, New York, near the Fall River, South Dakota, near Pike's Peak, Colorado, and in Madison County, North Carolina. They are all used as resorts for invalids.

There are a few other geyser regions in other parts of the world. Those in Iceland were celebrated for their size long before those of the Yellowstone were discovered, and there are geyser regions in New Zealand and the Hawaiian Islands. But none of these equals those of the Yellowstone in either number or beauty.

6. In some parts of the park we find clusters of shafts, some quite low and others ten or fifteen feet high. These shafts are the trunks of trees which have been petrified. They are now solid agate, but on examining them, the markings of the bark, the rings of growth and even the worm holes can be easily traced. These forests are supposed to have been submerged in a strong mineral solution which caused the wood to change to stone. The most remarkable thing about it is that on making excavations in the earth near these petrified forests, eleven layers of such shafts have been found, divided by cushions of lava. This may give some idea of the length of time which was required to build up this plateau. Think of the time, perhaps more than a hundred years, that it takes a tree trunk to reach the size of one of these shafts, then to be covered with lava, this lava to be decomposed, fitting it for the growth of vegetation, and other great trees to grow on this new soil, until eleven such layers were formed.

Other petrified forests are found in several places in the plateau region of Western United States, those in Arizona and in California being the principal ones.

7. Besides these volcanic features, the park is noted for its beautiful scenery, and one of the most beautiful parts is the Yellowstone Lake. It is the largest lake of the park, having an area of 139 square miles, and is one of the highest lakes in the world. It is so far above sea level that it is said that if Mt. Washington, 6,291 feet high, could be placed in the lake at sea level, the surface of the lake would still be a half-mile above the summit of the mountain. The shore of the lake is made up of many pine-covered promontories, and

its surface is dotted with scores of beautiful islands. There is a large steamboat on the lake for the use of tourists. It had to be brought to the lake in sections, and at some places in the road the cliffs had to be blasted in order to get it through.

Following the outlet of this lake—the Yellowstone River—for about twenty miles down its course, we come to the Grand Canyon of the Yellowstone. The region hereabout is an old geyser basin in which most of the geysers have become extinct, and the river for about thirty miles has cut a gorge through this volcanic rock and hot springs deposit, from 1,000 to 1,200 feet deep and 1,000 to 2,000 feet wide. There is a granite bluff at the upper part of the basin which has resisted the erosion, and over this the water falls to the bottom of the gorge below. It is one of the most beautiful waterfalls in the world. It has been described as appearing like a "clasp of emerald from which descends a spotless robe of ermine," and the bottom is hidden in clouds of mist. The Lower Falls of the Yellowstone are 310 feet high, nearly 150 feet higher than Niagara, and although much narrower, are far more beautiful because of the beautiful mountain scenery which surrounds them. Yosemite Falls in California are higher than those of the Yellowstone, being 1,200 feet high, while the Yellowstone Falls are only 300 feet high.

8. Below the falls, the chasm extends for a distance of ten miles.

> Its sides are radiant with color, we see streaks of crimson, orange, violet and green of the brightest tints, and mingled through this are rocks of purest white. The cliffs can best be viewed from above looking down from the edge of the chasm. The milk-white walls drop suddenly from the very edge of dark pine forests, down, down, carved in most splendid grottoes, holding, perhaps, snow in their deep recesses, rising again in slender pinnacles on which the eagles build their nests, and may be seen fluttering around them, looking like sparrows in the distance. down, down, to the river, clasped, but not held in this splendid embrace.

Another great canyon in America is the Grand Canyon of the Colorado River. This is the greatest canyon in the world.

The whole of the upper portion of the Colorado flows through a plateau region, and there are only a few miles in that part of its course that it does not flow through a canyon. But the part that is called Grand Canyon is in the northwest part of Arizona. Here for two hundred miles the river has cut a gorge through the plateau from 5,000 to 6,000 feet deep and from five to twelve miles wide. Its sides are colored, like the Yellowstone Canyon, though not so brightly, the rocks being dull reds, browns, olive, and some places deep black.

The Snake and Columbia Rivers have cut deep gorges in their channels, that of the Snake being the longer, but neither being so long or deep as the Colorado. Smaller gorges are found in the upper Rio Grande, and in the Delaware, the Susquehanna and Hudson rivers, where they break through the Appalachian Mountains in eastern United States.

9. Across the southwest and southern part of the park extends the Continental Divide of North America, the highest part of the Rockies. The snows on the summits of these mountains give rise to the headwaters of the Missouri, the Columbia, the Snake and the Colorado rivers, and to numerous mountain lakes. In a high plateau among these mountains is a tiny but very interesting lake. It is in the highest portion of our country except the high mountain peaks, and in the spring when there is an overflow, part of its waters flow to the Atlantic Ocean and part to the Pacific, so it has sometimes been called the connecting link between the two oceans.

10. It is estimated that nine-tenths of the area of the park is covered with forests, mostly pine, of dense growth, with trunks about twelve inches in diameter and reaching often a height of from 100 to 150 feet, straight as an arrow. These forests prevent floods in the rivers in the spring by preventing the too rapid melting of the snows and holding back the water. Great herds of deer, antelope and elk find a safe home here, one herd of elk numbering over 30,000 animals. The whole park is held as a forest and game pre-

serve, and the bears, wolves, foxes, etc., have nothing to fear from the hunter's gun. There are only a few buffalo in the herd in the park, and only a few of these animals left in the United States.

11. Near the north entrance of the park may be seen a cluster of about a dozen neat buildings, the residences and headquarters of a company of United States militia. These buildings constitute Fort Yellowstone. The chief duty of these soldiers is to protect the forests of the park by preventing forest fires. Parties of them are constantly patrolling the park for this purpose, and also to protect the game and to prevent the damage of scenery by travelers. They are very particular about this and take all precautions to prevent such destruction. Every tourist must register and leave his firearm sealed. Then if this seal has been broken, on leaving the park he is liable to fine of $1,000 or imprisonment. And a tourist is known to have been sent back many miles with scrubbing brush and water to wash off his initials which he had made in some interesting spot. The soldiers also look after the building and repairing of roads.

Different parts of the Park are connected by telephone with headquarters at Fort Yellowstone so that the patrolling soldiers may easily communicate with the commander if assistance is needed, or if any breaking of the rules by travelers has been discovered.

12. The park is a favorite resort for tourists. .Excellent roads constructed and kept in repair by the United States government connect all the principal points of interest, but railroads are not allowed to extend their lines within the park boundaries. Visitors over the Northern Pacific enter the park at Gardner; those over the Oregon Short Line at Yellowstone, and those over the Burlington leave the train at Cody and take a coach or automobile ride of some ninety miles before reaching the boundary of this wonderland. Since 1915 automobiles have been admitted to the park to the great convenience of those who wish to make the trip in their own conveyance. There are several large modern hotels for the

convenience of tourists. Permanent camps are also maintained, in which tourists may find good accommodations.

The time that most tourists visit the park is during July, August and September. During the remainder of the year there is very little human life except the keepers of the hotels and the soldiers, and the whole place seems given over to the wild animals. The snowfall in winter is sometimes twenty feet deep, and the temperature falls as low as 50 degrees below zero, but still above the snow may be seen the geysers and the steam from the hot springs.

13. There are several such regions of beautiful scenery among the western highlands of North America, though we find none containing such evidences of present volcanic forces as we find in the Yellowstone Park. The Niagara Falls, Yosemite Valley, Yellowstone Park and the Grand Canyon of the Colorado are called the four great natural wonders of America. And south of the Yellowstone Park in the Rocky Mountain system, are four other large mountain valleys or parks, the North Park, Middle Park, South Park and San Luis Valley.

North Park is in southern Wyoming and northern Colorado. It is a plateau about 7,500 feet high, the top nearly level, surrounded by high mountain ranges. Its area is about 700 square miles. Middle Park, just south of this, consists of a collection of narrow valleys, separated by high mountain ranges. South Park is the largest of these four parks, having an area of 1,000 square miles. It is a table land from 8,000 to 10,000 feet high and nearly elliptical in shape, crossed by a few low mountains and surrounded by high mountains which rise abruptly from the plateau.

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CHAPTER SEVEN

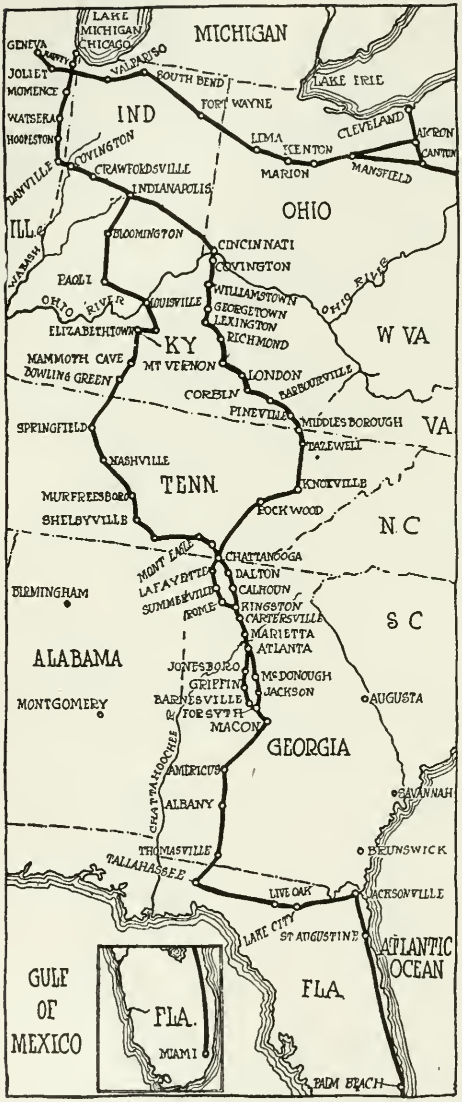
A TRIP OVER THE DIXIE HIGHWAY

The Archer family, consisting of Mr. and Mrs. Archer, Henry, aged 16, and Grace, aged 14, lived in a suburb of Chicago. Mr. Archer had a prosperous business, and in the spring that Grace completed her work in the eighth grade he purchased a commodious touring car. Henry had just completed his course in a business college, and as a reward Mr. Archer promised to take the entire family on an extended automobile trip. However, the pressure of business prevented him from fulfilling his promise until October.

All through the summer, routes and plans were considered. The Archer home was supplied with books and magazines, and Mr. Archer discussed daily with the family current events, so that Henry and Grace were well informed and took a keen interest in these discussions. Mr. Archer turned the matter of planning the trip over to the young people with instructions to make a thorough investigation of several routes, and report.

A number of trips were considered, but two appealed to the young people more strongly than the others. They were one over the Lincoln Highway and the other over the Dixie Highway. Henry preferred the first and Grace the second, so the route had to be settled by a family discussion. Henry wanted to go over the Lincoln Highway because he had learned that it was the longest road in the world, extending from New York to San Francisco. The bigness of the enterprise appealed to him, and then he wanted to see the Rocky Mountains.

Grace wanted to go over the Dixie route because she said they would see so many interesting things before they had travelled a week to get to them. Besides, she had read a good deal about the people of the Southland and she would like to meet them. Then there were Mammoth Cave, Lincoln's early home and the great battlefields around Chattanooga that were more interesting to her than bare mountains. The Dixie



MAP SHOWING ROUTE SELECTED FOR DIXIE HIGHWAY

Courtesy of the *Motor Age*

trip was finally agreed upon, partly because of the facts that Grace presented, and partly because of the season. Mr. Archer soon convinced Henry that they would be almost certain to find snow, cold weather and bad roads in the mountains by the time they reached them.

All arrangements having been made, the family started early in October for St. Augustine, Florida. The first day's ride was through the fertile corn lands of Illinois, and though the young people had read about corn, they never before had such an opportunity to learn by observation of the vast extent of the cornfields. The night was spent at Danville, Ill., a town of considerable interest as a railroad and mining center. But there were greater attractions ahead, and early the next morning the tourists were again on their way. They were now in Indiana and the scenery presented a more pleasing variety than that of the day before. About half-way to Indianapolis they entered Crawfordsville, a town of worldwide interest as the home of Lew Wallace, the author of *Ben Hur* and a number of other celebrated works. Indianapolis was reached in the middle of the afternoon, and a stop until morning was decided upon, since there were several objects of interest in the city.

The first point of interest in Indianapolis was the Soldiers' Monument, in Monument Circle. It is 284 feet high and easily the most imposing structure in the city except the capitol. Henry challenged Grace to a race to the top, but Mrs. Archer told them they better save their strength for more important things. Henry remarked that the streets ran from the monument like spokes from the hub of a wheel, and he was in a measure right, for several of the main streets radiate from the monument as a center. These streets start near each other but become widely separated as they extend away from the center, and a stranger, starting from the central point, finds himself in a different locality from that which he expected to reach. The state house with its magnificent dome and beautiful grounds was visited, as was the public library, where the young people recalled that Indianapolis was the home of James Whitcomb Riley, the "Hoosier Poet."

Two other points of interest were visited in Indiana, Bloomington, the seat of the state university, and French Lick, with its great hotel that can accommodate over 700 guests. Near Bloomington are ancient mounds from which many Indian relics have been taken. French Lick is noted for its mineral springs whose waters have strong medicinal properties. One of these springs is named *Pluto*, and after drinking the water Grace remarked that it tasted bad enough to cure or kill almost anything. This water is bottled and sold throughout the country. The hotel is crowded with guests the year round, many of whom come long distances to obtain what benefit they may from the water. In early days these springs were frequented by the Indians and pioneer settlers for much the same purposes as they are now visited. The ride to French Lick was very enjoyable since it took our friends over one of the most beautiful sections of the state.

The ride from French Lick to Louisville, Ky., was uneventful. As they approached the Ohio River all manifested great interest in the falls. Mr. Archer explained how, in high water, because of the narrow channel below the falls and the wide channel above, the water was so nearly level that boats could pass down stream over the falls in safety. During low water, however, this could not be done. Many years ago a canal was built around the falls. The canal is always used by boats going up stream because the current over the rocks is so swift that they cannot make headway against it. After visiting the parks, riding over the boulevards and looking at the enormous tobacco factories and distilleries for which Louisville is noted, Henry, who had a short time before read Winston Churchill's *The Crossing*, wanted to look up the grave of General George Rogers Clark, the founder of the city. The party were directed to Cave Hill Cemetery where they found a low grave marked by a simple headstone bearing the letters G. R. C. Mr. Archer remarked, "It's a shame that the United States should neglect the grave of one of its greatest heroes and one of its most valuable servants." "Well," said Henry, "that's so, but I wonder if Clark Street in Chicago, Clark County in Illinois, Clarksburg, Indiana, and Clark County, Kentucky, are not all named after General Clark? If that is true, the people have remembered what the government forgot." Henry was right, and it is probable that these are more lasting monuments than one made of stone or bronze could possibly be. At least they are known and spoken of by thousands of people who would never hear of a monument in Cave Hill Cemetery should one be erected there.

And this leads us to mention another monument which the Archer's visited on their way. At Hodgensville, near Elizabethtown, and just a few miles off their road, lies the Lincoln Farm, on which Abraham Lincoln was born. They turned aside here to visit the Lincoln Memorial Hall, and the Lincoln Statue by the sculptor Wienman. The statue is of bronze, and shows Lincoln seated. It was erected by funds provided by the state of Kentucky and the Congress of the United States. More than 100,000 people subscribed to the fund for the Memorial Hall, which incloses the log cabin in which the great president was born.

> Child of the boundless prairie, son of the virgin soil,
> Heir to the bearing of burdens, brother to them that toil;
> God and Nature together shaped him to lead the van,
> In the stress of the wildest weather when the nation needed a man.
>
> — Margaret Sangster.

ONE OF THE SEVEN WONDERS OF THE WORLD

The entire family had anticipated with great delight their visit to Mammoth Cave. As they rode through the cave region they frequently remarked upon the absence of streams and springs. A large area in that part of Kentucky surrounding Mammoth Cave is "honey-combed," so to speak, with caverns into which most of the springs and small streams disappear. Mammoth Cave is often considered one of the seven wonders of the world. Over 150 miles of corridors have been explored in this underground marvel and more are being added each year. The cave consists of numerous chambers with vaulted roofs connected by passage ways or galleries. It has three levels and extends from forty to 350 feet below the surface. The cave may be considered as an underground river system that has gone dry, the main corridors being considered as the channels of the large streams, and the smaller corridors the channels of the tributaries. The cave extends over an area of nearly a hundred square miles. The three levels are connected in numerous places by huge vertical shafts, called *domes*. These domes are among the grandest sights in this underground world.

These and other facts the tourists learned after their arrival at Mammoth Cave Hotel. Special preparations were necessary for the underground trips. Grace and her mother were provided with suits of bloomers. for ladies are not allowed to wear long skirts in the cave. Henry and his father donned suits of jeans. In place of hats the ladies wore bandana kerchiefs and the men, small caps. Each was provided with a light, and the party set out with their guide for the entrance to the largest cavern in the world. Descending a long flight of stone steps they found themselves under an arch sixty feet high. As they approached the iron door through which all visitors must pass, all were surprised at the strong current of cool pure air issuing from the cave. Grace said that she expected the air would be hot and "stuffy." Henry, on the contrary, said that he expected it would be cold and damp. Their comments led the guide to explain that the air is practically of the same temperature throughout the year, averaging 54° in winter and 59° in summer, and that pure air is found in all parts of the cave.

Within a few minutes all came to a stop under a dome-shaped roof about sixty feet high, and the guide informed them that they were in the Rotunda, and directly under the hotel. From this point broad avenues lead in various directions. The visitors followed the one known as the Main Cave. They soon came upon the remains of large wooden vats, and both Grace and Henry wanted to know why such things had been built in the cave. Mr. Archer was unable to answer their questions, so they appealed to the guide. He told them that these vats were the remains of saltpeter works which were established here during the War of 1812. The saltpeter was hauled in rude oxcarts through the wilderness to the Ohio River and to Philadelphia, and used in the manufacture of gunpowder to supply the army and navy during that war. Investigation of the guide's statement after the party returned home revealed some important facts in the history of our country which are but little known. The cave furnished the government with the greater part of its supply of saltpeter during those years of trial, and without this supply the American army and navy would have failed for lack of ammunition.

A little farther on the guide asked the party to rest for a few minutes on some rude branches. When they were seated he gathered up the lights and extinguished them, then with his own light disappeared behind a huge rock. For the first time in their lives the Archers learned what total darkness meant. Soon a faint light touched the roof about fifty feet above them, then bright spots resembling stars in a dark sky began to appear as the light became stronger, until finally this black arch over their heads resembled the Milky Way on a clear winter night. This section of the cave is very appropriately named "*The Star Chamber.*" The "stars" are crystals of gypsum which so reflect the light when thrown upon them at the right angle as to produce this remarkable effect.

"But where are the stalactites?" exclaimed Grace. "I thought the cave was full of them." "No," replied the guide, "stalactites are found in only a few chambers. I will now take you to Fairy Grotto where you will see some very fine ones." In Fairy Grotto a number of interesting stalactites were found and the guide explained how they were formed and the long time required to produce even the smallest of them. The formation of many of the large ones must have begun thousands of years before the beginning of the Christian Era. They were old before the ancient Egyptians began to build the great pyramids.

Fairy Grotto was at the end of the trip, so the party turned homeward, visiting Olive's Bower on the way, where they saw one of the largest and most beautiful stalactites in the cave. The party reached the hotel just as dinner was ready and it is needless to say that they did ample justice to the excellent meal prepared for them.

The second trip took the party over the "River Route." This led them to the lowest level, past the Bottomless Pit, through Fat Man's Misery, a narrow winding passage, and gave them a boat ride on Echo River, where they listened to the wonderful echoes in River Hall, saw the eyeless fish, Mammoth Dome, 284 feet high, and the Egyptian Temple, a combination of stalactites that closely resembles the gateway to the famous Temple of Karnak on the banks of the Nile. This trip took a good part of the day, but it was a day filled with wonders that would always be remembered. To attempt to tell all they saw and the fun they had would be to extend this story far beyond the limits it can occupy.

WHERE "GREEK MET GREEK"

The next important point of interest was Chattanooga, around which cluster so many memories of the Civil War. Since a guide was necessary to the understanding of the movements of the troops over this great battlefield, the Archers made the tour in one of the regular automobiles which makes daily trips over the region. Mr. Archer said that Chickamauga was known as the most completely marked battlefield in the world, and before the tour of the field was completed everyone in the party believed this to be true.

The ride over the Chickamauga battle ground, now a national park, was one of great interest, and the young people got a clearer idea of the extent of a great battle than they ever had before. Every point of interest is marked by bronze tablets giving a brief account of the troops engaged and the result. Cannon mark the position of the batteries, and the states have erected monuments at important points occupied by their respective troops. With the explanations of the guide, the party could imagine they were in the midst of one of the great battles of the Civil War. The return took in Missionary Ridge, and when Henry and Grace viewed the steep slope up which the Union forces rushed in the face of a murderous fire to dislodge the Confederates on the summit, they marveled at what seemed an impossibility.

The afternoon trip was to the summit of Lookout Mountain, from which an extended view of Chattanooga and all the surrounding region is obtained. Here an officer of the regular army explained the celebrated battle above the clouds in which the Union forces under General Hooker gained a brilliant victory. From the summit of Lookout the observer looks down upon the battlefield, which is 700 feet below him. This also is a national park and beautified by many monuments. On the highest point of the mountain the State of New York erected a magnificent monument to its soldiers who were killed in the battles about Chattanooga. All these things, as well as the National Cemetery, where thousands of soldiers are buried, were seen by our tourists before they slept.

THROUGH THE SOUTH

Early the next morning they were on their way to Atlanta. The road led them through the hill country of Georgia. The fields of cotton with its white bolls and brown stalks, and the negro cabins were a source of interest and delight to the travelers who for the first time encountered the country life of the South. Atlanta, with its modern skyscrapers and crowded streets, seemed more like a Chicago than any city they had visited. A drive through its main streets and a visit to the state house, where the entire party were surprised at the exhibition of the resources of the state, the portraits of Southern statesmen and generals, and the collection of Confederate flags, completed their brief inspection of the city at this time, since they expected to see it again on their return. The road through the southern part of Georgia took them through what is known as the "Wire-grass Country," so-called because the native grass becomes so wiry that cattle cannot eat it after it is a few inches high. The pine forests were everywhere indicative of turpentine, tar and lumber. As they neared the Florida boundary the palmettos and other palms began to appear and added a new feature to the landscape. The road from Tallahassee to Jacksonville passed through a beautiful region of low hills interspersed with lakes. At Jacksonville the ostrich farm and alligator farm were visited and the trained alligators afforded much amusement as they performed their "stunts."

St. Augustine, the destination of the Archers, was now near at hand, and a few hours' ride brought them to this quaint old city where the old and the new are mingled in almost hopeless confusion. It is a beautiful city of palms and flowers, and the quaint old houses in sharp contrast to the magnificent hotels, beautiful churches and modern business blocks, lend to the city a peculiar charm found nowhere else in the country. It was a fitting climax to the long trip from Chicago. Several days were spent here resting and sightseeing.

The chief attraction for Henry and his father was Fort Marion, formerly Fort San Marco of the Spanish rule. The fort was begun in 1565 and was 190 years in building. The walls are of a variety of shell rock known as coquina, and in some places are forty feet thick. Most of the work during the long period of construction was done by slaves brought from Mexico, and by Indians who had been made prisoners of war. The work was completed in 1756. When the king of Spain learned of the enormous sum of money expended upon it he exclaimed, "Its curtains and bastions must be made of solid silver." The fort is an irregular structure with four triangular-shaped corners, or bastions, on three of which are sentry towers. On the fourth is a watch tower, from which an extended view of land and sea is obtained. The walls inclose an area of five acres and are about twenty-five feet high. The fort is surrounded by a broad moat or ditch forty feet wide, which in times of danger was filled with water. In the interior are rooms for officers' quarters for the garrison, and numerous dungeons where prisoners were confined. These are extremely dark and dreary places. This is the oldest fort in the United States and is the only castle built on the plan of those of the Middle Ages on the American continent. These and many other interesting facts were learned by the visitors as they wandered over the fort and about the grounds.

Grace and her mother were interested in the flowers, the narrow streets and the beautiful hotels, the Ponce de Leon being one of the finest in America. Some of the old streets are so narrow that teams cannot pass in them, and one, Treasury Street, is only six feet wide. Some of the old houses contain objects of historic interest, which give a good idea of the furniture used by the early settlers. In all these things the ladies took a live interest. The Plaza, or public park, in the center of the city was an object of interest to all. In it are found the old slave market and the Spanish and Confederate monuments. Adjoining is the Post Office, which was the governor's palace during the Spanish rule. It is the oldest post office in the United States and the oldest public building in St. Augustine. Just across the street from the Plaza is the old cathedral, the first Roman Catholic church in the United States. In the belfry is a chime of four bells, one of which bears the date 1689, being the oldest in the country.

The old gates built with wall and moat, begun in 1702 and completed in 1727, were also of interest. These gates and a short section of the wall are all that now remain of these early defenses.

One day was given to sight-seeing on the beach—a dip in the ocean and a visit to Anastasia Lighthouse. The tower is 165 feet high, and all took the climb up the winding stair to see the great lantern with its hundreds of lenses, and to obtain a view of the ocean and the surrounding country. Grace said that she never supposed a lighthouse was so large, and Henry said that he had no idea of the size of the light nor of the number of pieces of glass in the lenses. After a pleasant week of sight-seeing and rest our friends began their homeward journey, visiting some of the places at which they stopped on their way to St. Augustine. At Chattanooga they took the eastern road which leads to Knoxville, Tenn., and Lexington, Ky., to Cincinnati. This enabled them to traverse the beautiful bluegrass region of Kentucky, noted for its good farms and famous horses. The first week in November the family reached Chicago, glad to be again in their own home, but all agreed that the journey had been of the greatest value as a means of recreation and education. Both the young people declared that they had learned more about their country on this trip than they had learned in all the geographies and histories they had ever studied.

CHATTANOOGA BATTLEFIELDS

By Dr. Charles A. McMurry

Chickamauga. During the War of Secession Chattanooga was one of the three central or strategic points for the possession of which the forces of the North and of the South struggled with great energy. The three points were Vicksburg, Chattanooga and Richmond. After the capture of Vicksburg, the Northern troops were next centered upon Chattanooga. Rosecrans, at the head of the Army of the Cumberland, was in the valley at Winchester, 113 miles south and east of Nashville. He was ordered from Washington to push forward against Chattanooga, where General Bragg, in command of a Confederate army, was in possession of the city.

But Chattanooga was a very difficult city to approach with a Northern army. It lay behind a series of steep mountain ridges, including the Cumberland plateau, rising about 2,200 feet above sea level. Besides, it lay on the south side of a deep, broad river, without bridges, which must be crossed by the attacking army.

Notwithstanding these difficulties, Rosecrans devised a shrewd plan for getting his main army across the river and the mountain ridges, and of placing it behind and to the south of Chattanooga, so as to compel Bragg to abandon the city.

August 16, 1863, Rosecrans began this bold and dangerous project by sending one division of his army under General Crittenden directly eastward across the Cumberland plateau, and a part even across Walden's Ridge, to threaten Chattanooga from the north bank of the river. General Crittenden's troops swept across the mountains and made a great show of strength, building campfires along the crests of the high ridges and placing batteries on the hills and even posting batteries to shell Chattanooga. General Rosecrans' purpose was to make General Bragg believe that the whole Northern army was marching to attack Chattanooga from the north, but his plan was to send his main army directly southward over the ridge to cross the Tennessee River, thirty-five miles below Chattanooga, then to push over the Raccoon Mountains and Lookout Mountain eastward and march upon Chattanooga from the south.

This plan was swiftly carried out. The troops defending the river below Chattanooga had been mostly withdrawn by Bragg to protect Chattanooga from the north. Rosecrans pushed his army quickly down to the Tennessee River, threw a bridge across, and soon had his whole army on the south side and marching across the Raccoon Mountains. Even General Crittenden's army was drawn back, and it crossed the river a little farther up at Battle Creek. By September 8, Thomas had crossed Lookout Mountain, twenty-six miles south of Chattanooga, Crittenden was moving around the north end of Lookout Mountain to Chattanooga, and a third division, McCook's, had crossed Lookout Mountain forty-two miles south of Chattanooga. Having discovered these movements too late, General Bragg, on September 7, withdrew from Chattanooga and concentrated his army behind the ridge of Pigeon Mountain near LaFayette. Thus in less than three weeks Bragg was maneuvered out of Chattanooga, and he took a position some twenty-five or thirty miles to the southeast of that city.

But in crossing the mountains the three main divisions of Rosecrans' army had been widely separated. Thomas' division was in the center at Stevens Gap, one division was twenty miles to the north near Rossville, and the other nearly twenty miles to the south. This was thoroughly bad, and General Bragg at once took advantage of the wide dispersion of Union forces. His army was now concentrated near LaFayette, and he ordered two divisions to press through the gaps of the Pigeon Mountain and to attack and crush Thomas before he could receive help from the others. There was, in fact, pressing danger of Rosecrans' army being destroyed in sections. Desperate efforts were made day and night to bring the three divisions of the army within supporting distance of one another.

Rosecrans had expected Bragg's army to continue its retreat southward, but instead of this the latter was centered at a very favorable point and was offering battle before Rosecrans was ready to receive it; indeed, the Northern army was in great peril. Fortunately for the Union army, Bragg's orders to make an immediate attack on Thomas were not obeyed. More than twenty-four hours were lost in delays—September 10 and 11—and finally the attack was made on the afternoon of the 11th, after Thomas had been reënforced. The attack was repulsed, and that evening additional troops from the south joined Thomas, and he was safe.

General Bragg was bitterly disappointed, but at once he turned his forces against Crittenden's division of Rosecrans' army, which was twenty miles to the north, near Rossville, and was separated into two divisions several miles apart. A strong force of Confederates under Polk was marched against Crittenden on the morning of the 13th, but once more Bragg's orders were disregarded. Crittenden by great exertions joined his forces and took up a strong position west of Lee and Gordon's Mill, and Bragg was again disappointed.

It now began to be clear to Rosecrans that Bragg was not retreating, but was in strong postion and preparing for battle. But Rosecrans' army was still widely separated, and it was all important that the three divisions be brought within easy supporting distance. From the 11th of September on, Rosecrans was making desperate efforts to draw his divisions together, but Thomas could not leave Steven's Gap till McCook's army division from the south had joined him, which did not occur till the evening of September 16. Then he moved north to join Crittenden, and by the evening of the 17th the three divisions were near enough for mutual support.

In the meantime, Bragg had been pushing his army to the north so as to get on the north flank of Crittenden, and between him and Chattanooga from this point hoped to drive Crittenden back in retreat upon the rest of Rosecrans' army and save Chattanooga. The nights of the 17th and 18th witnessed a struggle for position, each army trying to get in between Chattanooga and the other army. On the night of the 17th Bragg issued orders to his troops to cross the Chickamauga Creek at daybreak, attack Crittenden on his north flank and drive him back southward. In carrying out this movement Bragg's troops met with serious difficulties and resistance from the enemy. "The narrow roads and the stubborn resistance of Minty's cavalry brigade from Pea Vine Creek to Reed's bridge, and of Wilder's mounted brigade at Alexander's bridge, and also at Reed's in aiding Minty, so delayed Bragg's columns that no general attack was possible on the eighteenth" (Boynton).

That night Bragg's army crossed Chickamauga Creek and made camp, prepared to attack Crittenden early on the morning of the 19th, hoping to drive him back upon the rest of the Federal army. But during the night, and unknown to Bragg, a complete change had taken place in the arrangement of the Federal troops. General Thomas, with three divisions of the Federal army, marched past the rear of Crittenden and at daybreak took a position along the LaFayette road to the north of Crittenden, forming thus the left wing of the Federal army. These movements of the Union army continued all night; the last troops that came into position on the Union left were Brannon's corps, at sunrise, and they at once engaged in the battle without taking time for breakfast. By this movement Rosecrans placed his army between the Confederates and Chattanooga, and the desperate two-days' battle which followed was to settle which army was to occupy the town.

Bragg was completely surprised to find the main body of the Union army at the north side of Crittenden's troops, but he quickly shifted his forces to the battle, which was soon raging fiercely along the whole left front of the Union line.

The battle thus opened on the left front of the Union army was fiercely contested from the first onset, near Jay's mill. New brigades were marched in from both sides, and the fighting was gradually developed southward toward the center. The ebb and flow of battle continued till one o'clock, when both sides desisted. At the center the Confederate forces, after much fighting, drove back the Federals across LaFayette road into Dyer field, but reënforcements of Union troops appeared at this crisis and drove the Confederates back to their old position. In the afternoon a fierce battle developed on the Union right which lasted until sundown.

The entire battle front of more than three miles had witnessed during the day a succession of charges and countercharges which displayed the most determined courage on both sides, and it would be difficult to say that either army had gained any decided advantage.

During the night both commanders rearranged their troops and prepared for the final desperate struggle the next day. The right wing of the Federal army was withdrawn to stronger positions, and rude breastworks of trees and stumps were hastily constructed. The Union army had the advantage of higher position and also of these rude breastworks, and were awaiting attack, while the Confederates had larger forces and reserves that overlapped the Union lines. Again the battle opened on the left front of the Union army, and was gradually extended to the right. In the early assaults the Confederates outflanked the Union line and drove back the troops, but in return a furious attack upon the advancing Confederates was made, and they were forced back into retreat. During the forenoon the line of Union troops that formed an arch around the Kelly field was furiously attacked, but the attacking Confederates were at length driven back with heavy losses. Confederate officers described the fire from the Union line as a continuous rain of lead. The loss of life was very heavy.

About one o'clock by some kind of mistake in orders, a break was made near the center of the Union line. Wood's troop, which had occupied this position, was ordered to the left, and an opening was thus made which was quickly detected by General Longstreet, commanding the Confederate left. Into this break in the Union line Longstreet poured powerful divisions, scattering the Union center, and taking many prisoners. The whole right wing of the Union army was thrown into confusion, and a wild rout followed. Even Rosecrans and his staff were swept away in this mad retreat toward McFarland's Gap and thence to Chattanooga. It looked as if complete ruin would overtake the whole Union army.

Longstreet then turned his divisions to the right to crush Thomas, who was now in command of what was left of the

Union army. Before the Confederates were ready for the attack, a strong line was formed on Snodgrass Hill and in the Horseshoe Ridge. A furious assault was made upon this Union line, but after an hour's heavy fighting the Confederates were checked. Thomas was in command at Snodgrass Hill. At three o'clock he was unexpectedly reënforced by Gordon Granger of Stedman's division and McCook of Morgan's division, who had been stationed three miles to the north and had heard the din of the heavy fighting. Without orders they marched at noon to Thomas' support, and arrived just in time to attack and drive back a strong force of Confederates that was moving across the west end of the Horseshoe line. They also brought a new supply of ammunition for the other troops, whose cartridges were exhausted. At the same time Thomas was joined by Van Derveer's brigade, which moved upon the ridge and strengthened the main line on Snodgrass Hill.

Longstreet now brought on heavy reënforcements, being determined to break Thomas' fighting line on the hill and thus complete the destruction of the Union army. Between three and six o'clock furious and long continued assaults with heavy forces were made by the Confederates upon this single line of defense. But the line held firm, and they were not able to break through; both sides showed supreme courage and unfaltering determination. It is doubtful if on any battlefield of the war the men on either side showed a higher degree of steadfast courage than was exhibited by those who attacked and those who defended Snodgrass Hill. Thomas' men held their ground till sundown and then made an orderly retreat to Rossville.

At Rossville, Thomas disposed his troops so as to control the pass and the ridges on both sides, so that he could shut out the Confederates from Chattanooga. The next day, as Rosecrans ordered, he marched his army back to Chattanooga, and Rosecrans then threw a strong circle of defenses about the city.

The two days' terrific fighting at Chickamauga was thus not very decisive for either side. The Union army had been driven from the battlefield, but was left in possession of Chattanooga. Bragg's army had suffered great losses, about 18,000 men, while the Union army had lost about 16,000 in killed, wounded and missing.

Bragg now took possession of Missionary Ridge of Lookout Mountain, and succeeded in getting control of the river and roads leading into Chattanooga. The result was that the Union army had no good means for securing supplies and was threatened with starvation.

The Battle about Chattanooga. Bragg seemed to be in a position now to starve the Union army or to force it into a disgraceful or disastrous retreat.

The only route on the north side of the river on which the Union army could get supplies was a long, round-about and very rough road of sixty miles to Bridgeport over the mountains, and in many places it was almost impassable with deep mud. The whole distance was strewn with wrecked baggage and dead horses, and hauling was extremely slow and difficult.

At this juncture Grant was put in command of all the Western armies. Rosecrans was retired, and Thomas was placed in charge at Chattanooga. With great difficulty Grant made the journey on horseback over the almost bottomless sixty-mile road, reaching Chattanooga the night of October 23. He reported that "the roads were strewn with the debris of broken wagons and the carcasses of thousands of starved mules and horses." He at once carried out a plan begun by Rosecrans to open a road from Brown's Ferry on the west side of Moccasin Bend, thence on the south side of the river by the short route to Bridgeport, following the old highway to Nashville, through Wauhatchie and Whiteside. General Hooker with his newly-arrived army of 16,000 men was ordered to cross to the south side of the river at Bridgeport and move along this road south of the river to Wauhatchie. At the same time 1600 Union troops floated down the river at night from Chattanooga and, combined with another force marching on the north side of the river, seized Brown's Ferry early in the morning, drove back the Confederate troops at this point, put a bridge across the river, and there awaited the arrival of Hooker's advance. This double movement was entirely successful.

Bragg had observed this movement of Union troops from the top of Lookout Mountain. He at once saw how important it was to defeat the effort of the Union forces to establish this short and easy route for supplies south of the river, and he ordered General Jenkins with three brigades of Hood's division to move round the north foot of Lookout Mountain at dusk and attack Hooker's forces bivouaced just east of Wauhatchie. This program was carried out, and Jenkins attacked Gary's force of Hooker's advance about midnight. But Gary was alert and prepared for the attack. The battle continued sharply for three hours, with considerable losses on both sides. Then Jenkins was repulsed and withdrew. Law's brigade of Confederates overlooking the road to Brown's Ferry was also driven back by Hooker's forces, and before morning the Confederates had abandoned Lookout Valley. The Union army now was left in full control, and had a safe and easy road on each side of the river for bringing in supplies from Bridgeport and Nashville. Food and equipment now poured into Chattanooga, and preparations were made for another offensive movement. The siege of Chattanooga was ended, and Grant was preparing to attack Bragg.

Sherman at Vicksburg had been ordered to move his army to Memphis and thence across three hundred miles to Chattanooga. It was a long and difficult march, but by November 15 he reached Chattanooga, closely followed by his army. Grant had formed his plans, and on November 18 was prepared to carry them into effect. Sherman with his army on the north side of the river was to throw a bridge across the stream, transfer his army to the south side just below the mouth of Chickamauga Creek and lead the attack against the north slopes of Missionary Ridge. Hooker with his forces was stationed in Lookout Valley and was to drive the enemy from the slopes and summit of Lookout Mountain, and Thomas in command at the center just west of Orchard Knob was to move against this position and then on to the slopes of Missionary Ridge. It was on the 24th that the first forward movement was made. Thomas advanced and captured Orchard Knob and the low hills just south of it, after sharp fighting. His whole line was then moved forward nearer to Missionary Ridge.

On the afternoon of the 24th Hooker's divisions marched up the west slopes of Lookout Mountain and attacked the Confederates, in the famous engagement known as the "Battle above the clouds." They pushed their way north along the plateau, driving the Confederates back beyond the Craven House. Here after hard fighting, Hooker's advance was checked, but the Confederates retired across the valley during the night, and in the morning volunteers climbing to the top of Lookout found that it had been abandoned and the Union flag was unfurled from the summit, giving notice to the armies below of Hooker's success.

On the same day, November 24, Sherman threw his bridge across the river and, passing over with his army, marched against the northern spurs of Missionary Ridge, where he placed his army in position. The next morning he advanced against the northern slopes of Missionary Ridge and made repeated efforts to drive back the Confederates and get possession of the heights, but he was in the end compelled to withdraw.

On the morning of November 25, Hooker marched his troops across the valley eastward from Lookout Mountain, reached Rossville and took possession of Rossville Gap and of Missionary Ridge for a mile south of Rossville.

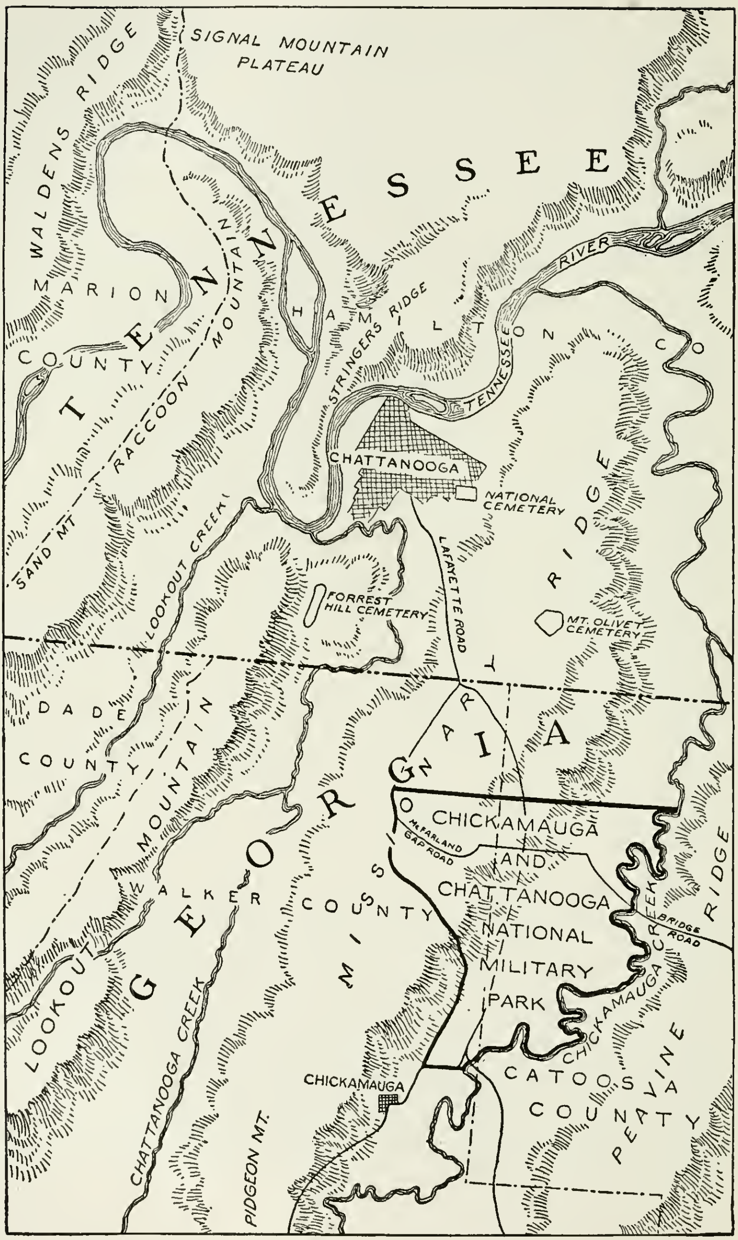
On the afternoon of the 25th, Thomas' army, with headquarters under Grant at Orchard Knob, advanced on the run against the rough and steep eastern slopes of Missionary Ridge. Capturing the earth works at the base the troops without orders moved on recklessly up the slope and were soon at the top of the ridge, four hundred feet high, driving the Confederates down the eastern slope. On the night following Bragg's army abandoned Missionary Ridge and crossed the Chickamauga eastward in retreat. Thus ended the important series of battles about Chattanooga, and the result gave the Union forces full possession of this important military position for the rest of the war.

Chattanooga, with its thrilling story of great battles in the unhappy struggle between the North and the South, is the chief center of interest in the western campaigns. The mighty battles fought on the slopes of Lookout Mountain and of Orchard Knob and Missionary Ridge, and the fierce charges and counter-charges on the extended Chickamauga battleground, have made these places memorable for all time to come. With the exception of Gettysburg no other spot among the American battlefields has so many military associations and such stirring interest as Chattanooga. Gettysburg was a culminating battle and a turning point in the great eastern campaigns. The final battles about Chattanooga went a long step toward settling the war in the West. There was also an unique interest in the Chattanooga campaign because the proofs of valor and of wise military strategy were so equally divided between the two armies.

In 1888 a movement was set on foot to convert the battlefield of Chickamauga into a great military park, where markers could be set up, monuments erected and a careful exhibit of the strategic features of the great battle placed on record. Officers of both armies and many public men became interested in this project and worked it out together.

In September, 1889, a joint meeting of Union and Confederate veterans was held in a great tent in Chattanooga. General Rosecrans presided at the meeting and made a stirring speech. Among other things he said:

> Today twenty-six years ago began the great bloody battle of Saturday, the 19th day of September, 1863, within twelve miles of this place, and the survivors of that battle, both Blue and Gray, and the people who today enjoy the fruits which grew out of that battle, are assembled together to consider how they shall make it a national memorial ground, which people of all time shall come and visit with the interest due to the greatness of the events which occurred on that battleground. One of the most noble features to me of the occasion is this: It is very difficult to find in history an instance where contending parties in after years meet together in perfect amity. It took great men to win that battle, but it takes greater men still, I will say morally greater, to wipe away all the ill feeling which naturally grows out of such a contest.


SIGNAL MOUNTAIN PLATEAU
WALDENS RIDGE
MARION COUNTY
TENNESSEE
RACCOON MOUNTAIN
HAMILTON CO
STRINGERS RIDGE
TENNESSEE RIVER
CHATTANOOGA
NATIONAL CEMETERY
SAND MT
LOOKOUT CREEK
FORREST HILL CEMETERY
LAFAYETTE ROAD
MISSIONARY RIDGE
MT. OLIVET CEMETERY
DADE COUNTY
LOOKOUT MOUNTAIN
GEORGIA
WALKER COUNTY
CHICKAMAUGA AND CHATTANOOGA NATIONAL MILITARY PARK
McFARLAND GAP ROAD
BRIDGE ROAD
CHICKAMAUGA CREEK
RIDGE
CATOOSA COUNTY
PEAVINE RIDGE
CHICKAMAUGA
CHATTANOOGA CREEK
PIDGEON MT.
LOOKOUT

At a great barbecue, where 12,000 seats were set, General George B. Gordon of Georgia spoke as follows:

> To this renowned battleground, made memorable by your prowess and hallowed by American blood, she bids you welcome. The South congratulates the whole country that these historic plains, where twenty-six years ago you met in deadly sectional conflict, are now to become the scene and witness of your joint pledge of restored and enduring fraternity. She congratulates the Republic that here where the North and the South marshaled their hosts for battle, these hosts now meet in living, lasting brotherhood, united in the bonds of mutual respect and confidence—a brotherhood made better, braver and grander by mutually cherished and imperishable memories.
>
> The people of this section hail with pleasure the coming of all men who have borne themselves bravely on the field of duty, but they fling wide their open doors and greet with a thousand welcomes those who in war were brave, and in peace both generous and just.

A National Park. In 1890 a bill was adopted in Congress establishing the Chickamauga and Chattanooga National Park and appropriating the funds necessary to purchase 7,600 acres covering the Chickamauga battlefield. The plan for establishing this park included also the roads approaching the Park along Missionary Ridge, the road from Rossville through the center of the Park (the LaFayette) to Lee and Gordon's mill, and several other approaches to the battlefield.

The organization and management of the Park were placed in the hands of the Secretary of War and of a commission of three appointed by him from among men who were participants in the battle of Chickamauga or of Chattanooga.

Since 1890 the Park management, under this commission of experts and assisted by a committee of survivors of these battles, divided equally among Northern and Southern troops, has developed this great national park, with the magnificent roads along Missionary Ridge leading to it, into a military memorial of remarkable interest. Hundreds of markers descriptive of the various engagements and monuments erected by the states, North and South, to commemorate the outstanding phases of the battles and tactical movements have been set up, so that this vast battleground now exhibits a remarkable object-lesson on military science. It has been visited by scores of famous military leaders and statesmen and by thousands of tourists yearly. To the remarkable historical interest attached to these stirring events of the great war are added wonderful scenery and picturesque views along the Missionary Ridge Road from Lookout Mountain and along the great Tennessee River gorge below. All these elements combined give interest to this region not equaled in any similar locality in our entire country.

PROJECTS AND PLANS FOR TEACHING GEOGRAPHY

By Dr. Charles A. McMurry

FOURTH YEAR

SEPTEMBER

First Week. Study the local city market.

1. General plan and arrangement of market.
2. Booths for fruits and vegetables; where they come from.
3. Booths for meat and fish; sources from which they come.
4. Sanitary arrangements and inspection of foods.
5. Cleaning up the market.
6. Relation to groceries, fruit stores, etc.

Second Week. Study the local surface features, hills, valley and streams, showing drainage. Study the highways and railroads coming into the town. Discuss road building and highway improvement, and the effect upon traffic. Make a map of the local district, showing streams, highways, railroads, trolley lines. Discuss winds and the circulation of air, the causes of storms, and weather changes. (See p. 565.) Study the thermometer and barometer and their uses.

Third Week. Study the industries of the town and country near home. Make a list of shops. Study agricultural products and dairying; stock raising; chief manufacturing plants; mills and factories. Excursion to a saw mill or planing mill. Visit a fruit store; where the fruits come from. Visit a furniture store. (See *Primary Geography*, Vol. III.)

Make a brief study of the earth as a whole; a globe.

Fourth Week. Study the public buildings of the town, as, post office, courthouse, town hall, jail, churches, fire station, school houses.

Excursions to a house under construction. (See *Primary Geography*, Vol. III.) Outlines of this topic as follows:

Basement walls and drainage.

Framework of house; floor plans.

Materials used; kinds of workmen and tools.

Chimneys; plumbing; wiring; stairways.

Doors and windows; interior finish.

Sources from which building materials are obtained, as mills and lumber yard.

OCTOBER

First Week. Study of the state map; locations of state capital and leading cities.

Sketch a map of the state, placing rivers, mountains, lakes, cities, chief railways.

Make a study of the state capitol building and its uses; the government of the state and its officers. Locate the state on the map of the United States

Second Week. Describe a steamboat trip on the Mississippi River. (See p. 205, 358; V, p. 284.)

Locate the chief rivers of the United States, and note their relation to the mountains.

Describe Mt. Washington and the White Mountains; the railway trip to the top of Mt. Washington.

Locate Pike's Peak in the Rocky Mountains and compare it with Mt. Washington. Show pictures of these and other mountains.

Third Week. Study lumbering about the Great Lakes; a lumber camp in the North; the big saw mills and lumber yards; shipment of lumber to the prairie districts and to the cities.

The yellow pine forests of the Southern states; shipment of lumber by rail and by rivers; the great forests of Oregon and Washington; of Maine and New England.

Fourth Week. Corn and the corn belt: The prairies and the cornfields; machinery for plowing, planting and cultivating corn; cattle, hogs and horses in the corn belt; dairy production, and the use of the silo; shipment of grain and meats, and products of the corn-producing area by rail and by water.

The manufacture of farm machinery; crop rotation and soil preservation; extent of the corn-producing area.

Make a map of the corn producing states. (See *Corn*, in Index.) The cotton plantation and cotton production: Planting and cultivating cotton; picking cotton; negro labor in the South; the cotton gin and the cotton press; baling; shipment of cotton to the mills of New England, and to England, Germany, etc. The manufacture of cotton goods in the South. (See *Cotton*, in Index.)

NOVEMBER

First Week. The study of the Great Lakes: Lake Michigan as a type study. (Consult this outline on page 350.)

Study the products of the Great Lakes region; make a map of the Great Lakes, locating cities.

Where else in the United States and in North America are lakes found?

Second Week. Study a coal mine in Pennsylvania or Illinois. Position of coal under ground; sinking the shaft to the coal strata; laying out the plan of the mine; ventilation; digging out and hoisting the coal; machinery.

Life of the miners; dangers, and how to prevent them.

The uses of coal in homes, shops, railways; location of the principal coal fields, according to states; the oil fields, and oil production.

Third Week. The city of Chicago:

OUTLINE

1. Bird's-eye view
2. Building of Fort Dearborn and the beginning of the village
3. Growth of the settlement
4. Canal talk
5. Conditions in 1832
6. Building the harbor
7. Construction of Plank Roads and development of trade with the surrounding country
8. Completion of the canal and building of railroads
9. Growth of business
10. The Great Fire and the rebuilding of the city
11. Solving the sewage problem
12. Comparisons

CHICAGO

If one were to visit Chicago today he would see a city of nearly three million inhabitants. He would see magnificent buildings, towering grain elevators, live stock markets, vast slaughter pens, large meat packing establishments, lumber markets, immense iron foundries, rolling mills and steel plants. He would see great wholesale and retail houses, department stores, publishing houses, mail order firms,—in fact, almost every conceivable form and phase of business. He would see a train every minute rolling in and out of the city, large lake steamers crowding the docks as they unload their vast cargoes of freight and passengers.

If we could look back on this same spot as it was less than a hundred years ago, we would see a low, marshy swamp, suitable only for frogs, mosquitoes and malaria. There was no natural drainage, no firm earth on which to erect large buildings—the immediate surrounding country was poor and uninviting. At this time there were but ten or twelve houses and fifty or sixty people.

Is it not marvelous that this small, uninviting village in less than seventy-five years should have outstripped other cities in growth of population, in the massiveness and solidity of its commercial buildings, in the extent and variety of its industrial development, in the number and strength of its financial institutions, in the matchless reach of its railway facilities, in the importance of its trade and commerce—both on land and on water—in the beauty and extent of its parks and boulevards, in the abundance of every natural product that makes living a comfort and a delight, and in the resolute and energetic character of its inhabitants which enabled them to recover from four disastrous conflagrations which swept away $200,000,000 worth of property? Chicago has accomplished all this within the lifetime of many of its citizens and has become the fourth city of the world, surpassing many that have been for centuries the commerical and financial centers of the world's trade, industries and wealth. Did all this happen by chance or magic, or are there real natural causes why it has astonished the world and promises to become its greatest city?

To answer this question it is necessary to begin with its early history and follow it through to the present time, observing how it has grown and what factors and conditions have affected its growth.

In the early days, when the whole Mississippi Valley was a wilderness, and after the French had sent Joliet and Marquette to explore the Mississippi, Chicago had commenced its first commercial activities. Le Mai, a Frenchman with an Indian wife, was the first merchant. He traded guns, whisky, blankets, tobacco and iron kettles to the Indians for furs. In 1803 the United States government built Fort Dearborn, a military post, on Chicago River. John Kinzie came the following spring and bought the establishment of Le Mai. He carried on a more extensive trade, sending out trappers in various directions. Kinzie was a silversmith as well as a trader, and he made many rings and bracelets, which he easily traded to the simple-hearted natives for furs. Ships came twice a year, in the fall and spring, to bring supplies and take the furs.

During the next thirty years very little was done except that the fur trade increased and food supplies began to be brought in from the surrounding territory. The country south and west, however, was being rapidly settled. Illinois and Indiana had become states. Many had passed beyond the Mississippi, and the great grain fields had commenced to be developed. There was no market for their products except in the East, and it was a long way down the Mississippi and *via* the Atlantic. Men began to say, "If we only had a canal from the Illinois to Lake Michigan, farmers could raise thousands of bushels of corn and wheat to be sent East by way of the Great Lakes, the Erie Canal and the St. Lawrence." Some enterprising men planned a route for a canal connecting the Illinois with the lake. Congress granted the state a strip of land along the proposed route. The very thought of a canal was enough to attract traders and speculators. In 1829 the city was laid out and lots were offered for sale. Cook county was organized in 1831, and Chicago became the county seat. By 1832 the village had about one hundred sixty inhabitants, described by an eye witness as follows:

"Next in rank to the officers and commissioners may be noticed certain shop-keepers and merchants. Add to these a doctor or two, two or three lawyers, a land agent and five or six saloon-keepers. These people inhabited some fifty clapboard hovels. Land speculators were as numerous as the sand; you could find horse dealers and horse stealers—rogues of every description, black, white, brown, red, half breeds, quarter breeds:—sharpers of every degree, peddlers, grog-sellers, Indian agents and traders of every description. The little village was in an uproar from morning to night, and from night till morning; for during the hours of darkness, when the housed portion of Chicago strove to obtain repose in the crowded plank edifices of the village, the Indians howled, wept, sang, yelled and whooped in their various encampments. With all this, the whites seemed to be more pagan than the red men."

By the end of the next year there were one hundred sixty houses. In the same year four steamers arrived and lake commerce began. A sand bar was across the mouth of the Chicago River; the boats had to anchor outside and push their live stock overboard to wade ashore. Work was commenced on the harbor, and within a year, the *Illinois*, a steamer from New York, sailed up the Chicago River. This was an occasion for a great celebration. Everybody shook hands with the jolly captain and complimented him and Chicago and everything in general.

The next ten years wrought wonderful changes. Wiser men began to see Chicago's wonderful position. They realized that in order that a city might grow she must have neighbors with whom she could deal. She could not feed herself, but depended upon the farmers to do that. If she was to make leather, the farmers must bring in the hides. To manufacture flour, farmers had to bring in the wheat. She required iron from the East and lumber from Michigan. The Illinois farmers had more cattle, hogs and wheat than they needed for home consumption, and they needed sugar, molasses and cloth. Other regions had lumber and iron to sell, and wanted to buy meat, leather and flour. How can these things be exchanged? "Here were two ends of a broken chain, the land and the water end—the producing end and the sending end." Chicago could become the connecting link if she would keep her harbor open for ships and her roads open for wagons.

Trade with the farmers gradually grew until hundreds of wagons, "Hoosier schooners," came in every week—some of them from more than a hundred miles. But bad roads were detrimental to the growth of the city. For three months in the spring of the year teams would stick in the mud, even in the streets. It was no uncommon sight to see signs like these: "No bottom here." "Shortest road to China." "Team of mules lost here last week." This condition was driving trade to other towns like Vincennes, Peoria, St. Louis, Cairo, Alton and Galena—towns that had better roads leading to them. Chicago realized that she must meet this difficulty. Therefore for a period of ten years she built plank roads in all directions from the city. This gave a new impetus to industries, and Chicago entered a new era of prosperity. By 1850 the population numbered 30,000, an increase of nearly 600% in ten years.

The Illinois and Michigan Canal was completed in 1848. This opened up trade with Southern Illinois and the states of Missouri, Iowa and Minnesota. Country roads leading to towns along the banks of the Illinois and the canal were busy, with wagons bringing loads of meat and grain and taking back the much-needed things from the East. It is estimated that within thirty-seven years after its completion it had saved the state of Illinois $180,000,000 in freight charges alone. The railroad made its appearance about the same time. The Lake Shore & Michigan Southern and the Michigan Central were built by 1852. In 1853 the Galena and Chicago Union was completed to Freeport, and the Chicago & Burlington to Burlington, Iowa, in 1855. These two roads joined the Upper Mississippi to Chicago and the East. Other roads quickly followed. To-day thirty-two roads, with an aggregate mileage of 109,500 miles, have their terminals in Chicago. Roads from these terminals reach every section in the United States and a part of Canada. One or more freight trains pass daily between Chicago and Portland, Seattle, San Francisco, Los Angeles, El Paso, Galveston, New Orleans, Mobile, Jacksonville, Baltimore, Newport, Philadelphia, New York, Quebec, Montreal, Duluth, Winnipeg and intermediate points. Almost no other city is brought in daily contact with such a vast territory. It is within a night's ride of 50,000,000 people. Fifteen hundred trains enter the city daily. Seventeen great steamship lines have their terminals here, carrying 12,500,000 passengers annually.

Compare Chicago with other cities on the Great Lakes and with eastern and western cities. Locate the twelve largest cities of the United States.

Additional large topics may be taken as follows: The wheat fields of Dakota and the Northwest; the big flour mills at Minneapolis.

Fourth Week. The Yellowstone Park. (See page 436.) Compare with other national parks.

Irrigation farming in the West. (See Index.) Describe a large irrigation ditch; how is it built? Building of dam for a reservoir.

Crops raised by irrigation; effects on population; extent of irrigation in the West; study a map of the irrigation region.

A gold mine in California.

DECEMBER

First Week. Study the Mississippi Valley as a whole: its position between the Alleghenies and the Rocky Mountains; the chief tributaries east and west; the floods of the Mississippi and their causes.

Chief products of North and South.

The cities of the Mississippi Valley.

The great period of steamboating on the Mississippi: recall the stories of Marquette (See p. 204) and La Salle and other early explorers.

The delta, and how it was produced: the jetties; New Orleans a Gulf port. (See Index.)

The West Indies: name and locate chief islands.

Second Week. Review the stories of early explorers and settlers, as De Soto, John Smith, The Pilgrims, Lewis and Clarke.

Discuss with the pupils the life of our pioneers. Ask how these people obtained their houses, furniture, fuel, clothing, blankets, sheets, carpets and food. They depended almost entirely upon themselves, so it was necessary for men and women to know how to do a great many things. When there were stores to go to, the pioneers rarely had money with which to buy things; they took hogs, wool or grain to trade for powder, salt, pepper and coffee.

When the country became more thickly settled, a number of people built their houses near together. Then when people living some distance away had something to sell, they brought it to these settlements or villages.

After a time one man would build a mill and would grind his neighbors' grain for them, someone would open a blacksmith shop and shoe the horses and fix wagons in the neighborhood; another would make shoes for everyone, and so on. Thus people began to do fewer things for themselves; they depended on those who could do some things better than they could.

Third Week. Study North America: locate chief rivers and valleys; mountains, peninsulas; the leading countries of North America; the oceans surrounding it.

Locate North America on the globe with reference to other continents and oceans. Locate the chief cities along the Atlantic, on the Gulf, and on the Pacific coast.

Tell about the Atlantic Ocean.

Lighthouses. Lighthouses are high towers built upon rocky coasts, upon the dangerous ledges of rock at sea and at the entrance to harbors, to guide vessels into them. When built on a hill, they are not so high as when built on a ledge at sea. They vary from seventy-five to over one hundred feet in height. When built at sea, the foundation, which consists of solid stone masonry, extends far below the water and rests upon solid rock. It extends twenty or thirty feet above the water, for the waves are so strong and so high at times that they would soon demolish a less substantial structure.

On one side of the foundation is a place where a boat may be anchored. A door, which when closed is watertight, opens into a stairway leading to the tower above.

In the upper part of the lighthouse, rooms are built and stairways lead from one to another. The first one is usually a storeroom, the next a kitchen, then a living room and at the top of the tower is a room inclosed by windows in which a great lantern is kept. The lantern must be filled, washed and trimmed regularly, and lighted early every evening.

Some lanterns are made to revolve and to show first a red light, then a white, or one red one and two white lights. These lights may often be seen for twenty or thirty miles.

A lighthouse keeper's life is a lonely one, for there are weeks at a time when he sees no one except the men who call to leave supplies. His pay is small.

Signal Service Stations. Lighthouses save many ships and many lives each year by guiding them into safe harbors or warning them off the rocks, but in heavy fogs the lights cannot be seen far at sea and vessels are driven upon the rocks and wrecked. To assist vessels in distress, the United States has built signal service stations all along its most dangerous coasts and on the Great Lakes. Men trained to rescue people and boats spend their lives here and do heroic work.

Each station contains living rooms for the men, a room for the life boat and other life saving apparatus, and a tower in which a man is always to be found scanning the water, on the lookout for a boat in distress.

On very dangerous coasts these stations are close together, and on stormy nights a man from each station walks the shore until he meets the man from the next station. Then each returns. These men keep watch all night, walking up and down the beach.

If a ship in distress is seen, the life boat is launched. This is built so that it can be used in the most severe storms without sinking. It is rowed to the wreck and the people are taken to shore in it. If the wind is so strong and waves so high that the men cannot use the life boat, a small cannon ball, having a line attached to it, is fired over the ship. If it reaches the boat, the passengers find a card attached to it telling them what to do. First they must pull in the small line. At the end of this is a heavier line and fastened to it is a strong rope. This is made fast to the vessel. Then a breeches buoy is sent out. By this device, one person at a time may be brought to land.

If anyone is nearly drowned, the life saving crew know what to do until a doctor can be brought. These man save thousands of lives each year and many thousands of dollars' worth of property.

Describe the great ships which carry passengers and merchandise across the ocean (show pictures of these). Tell of the number of people an ocean liner will carry, and the time required to cross the ocean. (See Type Study, *Voyage from New York to London*, p. 426.)

Fourth Week. Have the pupils locate the Green Mountains, the White Mountains, the Catskills and the Adirondacks. Tell the class of the beautiful scenery in all these mountains.

Have the pupil name the two long ridges of mountains found in the Atlantic highland. Describe the fine forests which grow on the mountain sides and the many rich mines found in this region. Mention the salt mines near Syracuse, N.Y.

Let the class name and locate the largest rivers which drain the Atlantic plain. Where do they rise? Of what use are they? (All furnish excellent water power and many furnish a means of transportation.)

Tell the class that because of the fine water power, there are some of the largest factories in the world in this section.

What bays are on the Atlantic coast? What large cities are built on them? Why? Make a brief study of Boston and New York.

Describe Boston Harbor, the narrow streets in the old part of the city, and speak of the many industries carried on here. Tell the story of the Boston Tea Party.

In connection with New York, tell the story of Peter Stuyvesant and the early Dutch Settlers. (See Vol. V, page 139.) Describe the harbor, the Statue of Liberty, the tall buildings, the elevated street railways and the underground railways. Tell the class the comparative size of the city and let them suggest some reasons for this. (See Type Study, *Voyage from New York to London*, page 426.)

JANUARY

First Week. Review the physical features of North America. Speak of the appearance the country presented to the first white people who came here. Ask who some of these people were, what part of the continent they sought, developing the fact that the English sailed down the Atlantic coast, and the French explored the interior. Tell the story of La Salle and Jacques Marquette. (See page 204.) Let the pupils follow the route on the globe. Later, tell of Champlain. Explain how much these early explorations meant to the countries that sent the men out. England and France each claimed the land her sailors found. Let the pupils note which held the most territory. Tell them the English built towns while the French built only rude trading posts where they could get furs from the Indians in exchange for manufactured trinkets.

Have one or two lessons on the Indians as they lived before molested by the whites. (See *Indian Life*, Vol. III, page 52.) Tell of those in the West who lived in homes built on rocky ledges high up the sides of canyons, of those who dwelt in tents and of those who lived in Mexico who had substantial villages. The work done by the Indians at the present time will be an interesting topic.

Second Week. A trip along the west coast to Alaska: the islands and scenery; the cold climate of Alaska and the North; the gold and coal and fisheries of the north coast; the mountains and glaciers.

Third Week. Study the political divisions of North America. Name and locate them on the map. To whom does Alaska belong?

Locate the United States. What oceans bound it on the east; on the west? What country is north of it? South of it? What mountains here? Which are the highest? The widest?

Where is the Great Basin? Ask the pupils to tell all they know about it. Speak of Great Salt Lake. Ask how many remember why it is salt. Have the pupils find Yellowstone Park. (See Type Study, *Yellowstone Park*, page 436.) Describe it to them, mentioning the fact that no one is allowed to molest the wild animals there. Tell what animals may be seen in the park.

Fourth Week. Let the pupils locate the Mississippi valley and tell what they remember of it. Where are the great plains? Let the pupils tell what they know of them.

Let the pupils find the Mississippi River on a large map. Let them follow it to its source. In what state does it rise? Explain that its source is Lake Itasca. What large rivers join it? Which is the largest? Where does it seem to rise? Of what value is this river system?

Where are the Great Lakes? Which is highest? Lowest? How do you know? Of what value are these lakes? (See Type Study, *Lake Michigan*, page 350.) What river drains them? Describe the St. Lawrence briefly, telling of its numerous rapids and waterfalls. Show pictures of Niagara Falls and ask how ships pass this and other falls. If no one knows, tell them of the Welland Canal and of smaller canals built around other falls and rapids in the river. Tell them, too. of the Erie Canal that connects Lake Erie with the Hudson River. Let the class explain why this is important. (See Type Study, page 415.)

FEBRUARY

First Week. Continue the study of the Eastern cities; locate Baltimore, Washington and Philadelphia.

Tell the pupils of the oyster fisheries in Chesapeake Bay, in connection with Baltimore.

Describe briefly the Capitol in Washington, and the White House.

Tell the story of William Penn and the Indians, and the founding of Philadelphia. (See Vol. V, page 139.)

Let the children find the state of Virginia. Ask what great man was born in Virginia. (They will probably remember Washington.) Show them where Mt. Vernon is. Tell briefly the story of Sir Walter Raleigh. (See Vol. V, page 139.)

Second Week. Compare the Pacific slope with the Atlantic. Which is wider? Which has the most harbors? What large rivers empty into the Pacific Ocean? Describe the salmon fisheries in the Columbia.

Tell the class of the fertile soil in these states, of the rainfall and mild climate. Ask them what they think the people do. Tell of the fine fruit raised here, and of the fine forests. Let them locate Seattle and Portland. Describe the harbors and the fine scenery.

Describe the forests of California, and the redwood trees. Locate Mt. Shasta. (See Type Study, *Mt. Shasta*, page 362.) Let the class locate San Francisco. Describe the Golden Gate. Have the class locate San

Diego. Tell them of the warm climate, the beautiful homes, and of the fruit raised there.

Third Week. Study the map of the Great Basin. Describe Great Salt Lake, and the streams flowing into it. Tell of the dry climate of this region, and find why it is dry; salt making along the shores of Great Salt Lake.

Story of the Mormons.

Fremont's first exploration.

Denver; its fine location.

The mountain peaks of Colorado; Pikes Peak.

Fourth Week. The Great Plains east of Denver; cattle ranches; how they are managed.

Wheat production in Kansas; Kansas City and the packing houses.

The Missouri River compared with the Ohio.

St. Louis, its fine position on the Mississippi.

MARCH

First Week. Begin the study of Canada. Bound it. Name the gulfs and bays. Tell briefly the story of Henry Hudson. What peninsula in the northeastern part? Describe it. What islands near? Tell of the fisheries around Newfoundland and of the prevalence of fogs. Discuss the physical features of Canada. Locate the highlands, the plains, the largest lakes and rivers. Tell the class the soil in the plains is very fertile and produces fine wheat. Ask what kind of climate Canada has. Tell of the winter sports. Locate Quebec. Tell of its situation on a high bluff overlooking the river, and of the many old relics to be found there. Locate Toronto, Winnipeg and Vancouver. Call the pupils' attention to the absence of large cities in the northern part of Canada. See if they can account for the fact. Of what empire is Canada a part? Recall the fact that France owned it first but in a war between the French and English colonists, the French were beaten, and Canada was given to England.

Study Greenland. Why was it so called? What kind of climate has it? What animals are found there? Describe them. Review facts concerning the Eskimos.

Second Week. Study Mexico. Locate it. What gulfs along the coast? Describe the physical features; the high mountains in the west, the volcanoes, the plateau and the coast plain. Discuss the climate, the vegetation and animals. Tell the class of the early inhabitants of Mexico, of their mode of living, of the coming of Cortez, and of the Mexicans of today. Locate two or three of the largest cities.

Name the largest states in Central America. Tell the class of Panama Canal, its length (fifty miles) and who built it. Let them follow on the globe a ship from New York to San Francisco, going, first, the old route and last through the canal. Tell them the distance (7873 nautical miles) the canal saves in this journey. Speak also of the bad storms often encountered in rounding Cape Horn. (See Type Study, *Panama Canal*, page 404.)

Tell the pupils that from Central America we get most of our bananas. Describe the tree, tell how the fruit is picked and shipped.

Third Week. The physical features and climate of Mexico; its resources, minerals, oil.

The story of Cortez and the first conquest.

The city of Mexico. Its location and buildings.

The recent disturbed and warlike status of Mexico.

Study the map of Central American states; locate the Panama Canal; Lake Nicaragua.

Fourth Week. Begin the study of South America. Locate it. In what zones does it lie? What of its climate? What waters around it? Discuss the surface. Name the highlands. Describe the Andes. Compare them in height with the Rockies. Describe the great plains of South America. Describe the jungles along the Amazon. Tell of the animals and bird life found here.

In describing the pampas, tell of the great herds of cattle found on them and the great fields of grain. Mention the cattle to be found on the llanos, also.

What large river systems in South America? Describe the Amazon, its wide mouth and the delta.

Have a lesson on the coffee plant. Show pictures of it. Describe it and its cultivation. Tell how it is shipped. (See Type Study *Coffee*, Vol. VI, page 164.)

APRIL

First Week. Study such topics as Brazil, the largest state of South America; compare with the United States; a coffee plantation; how managed; shipments.

The city of Rio de Janeiro: its harbor and its importance; compare it with other large cities of South America.

The Amazon River: a tropical river and forest.

Argentina and the Spanish states of South America: history of their war for independence from Spain.

Second Week. Study Europe as a whole; its chief mountains, rivers and plains; locate and name the peninsulas, gulfs, seas and bays.

Name the chief nations, and note their size and position; learn of different languages spoken in Europe.

Leading historical characters of European countries: Bruce of Scotland, Victoria of England, Napoleon of France Bismark of Prussia, Caesar in Italy.

Third Week. Study the capital cities of Europe: Paris, London, Berlin, Rome, Madrid, Vienna, Lisbon. Compare these cities with New York, Chicago, etc.

What people have migrated from Europe to America? English, Scotch, Dutch, French, Germans, Italians, Greeks, Russians, Swedes, Norwegians.

Recall the stories of William Tell, King Alfred, Horatius, Alexander, Columbus, Raleigh.

Discuss the changes produced in Europe by the recent World War.

Fourth Week. Tell of a trip across the ocean from New York to London or Hamburg. (See Type Study, page 426.) Collect pictures to illustrate this voyage.

Study the customs of the Dutch people, their old cities, canals, and buildings; the dykes of Holland; why built?

Recall the story of Peter Stuyvesant and New York.

Switzerland; its mountains and lakes; toy making among the Swiss.

MAY

First Week. A trip through Scotland: The Scottish lakes and mountains; Edinburgh; stories of the old castle; stories of Wallace, Bruce, Douglas and Randolph. (Consult Scott's *Tales of a Grandfather.*)

England: Study and sketch the map of England and Scotland; locate the leading cities, and make list of names.

Recall the stories of Richard the Lion-hearted; the Robin Hood stories; Sir Frances Drake. Make a visit to London; the Tower; the Houses of Parliament; Windsor Castle. Collect pictures of London and Edinburgh.

Second Week. Discuss briefly the situation of Norway and Sweden. Tell of the mountains, the forests, and the long sea coast of each country. (See Type Study, *Coast of Norway*, page 374.) Ask the class what the people probably do. Tell them Norwegians and Swedes are closely related to the people south of them. Their customs are much like the Germans. Describe their homes and dress.

Describe Switzerland and the Alps. Recall the stories of the St. Bernard dogs. Tell the class of the little Swiss homes built on the mountain sides, of the cattle and goats which are driven from the villages in the valleys to the mountain sides to find pasture, of the boys who carve wonderful animals and other toys out of wood while watching their herds. The Swiss butter and cheese find ready sale in London. Name and locate one of the large cities.

Take an imaginary journey from Switzerland through the Simplon tunnel to Italy. Tell the pupils of the balmy air, the blue skies and the beautiful views of the ocean one finds in Italy. Describe the dark-eyed, dark-haired and rosy-cheeked children in this far away country. Speak of the food they enjoy—especially macaroni and spaghetti. Have the pupils locate Vesuvius and tell what they remember of it.

Locate Rome, Naples and Genoa, the birthplace of Columbus. (See Type Study, *Columbus*, Vol. V, page 196.)

Third Week. Have a general review of the countries of Europe and the location of the most important cities.

Begin the study of Asia. Have the class locate it, name the waters around it and the principal countries in it. Where are the Himalaya Mountains? Describe them. Where is Mt. Everest, the highest peak in the world? Tibet? Describe these highlands. Notice the deserts in Southwestern Asia. Where is Siberia? To whom does it belong? Discuss its climate, the animals found there, the people and their homes. Tell the class of the transcontinental railroad Russia has built from Petrograd to Port Arthur. Locate the latter. Sibera has rich gold mines.

Study China. Name two large rivers. Tell of the destruction caused at times by their overflowing, of the use the people make of them. Describe the Chinese Wall. Explain why it was built.

Describe the Chinese people, their dress, food, homes, customs, their modes of travel.

Tell how silk worms are raised, how the silk is removed from the cocoons and what is done with it.

Fourth Week. Tell how tea grows; locate Peking and Hong-kong.

Study Japan; describe the people, their homes, dress, food and manners; speak of the cherry blossoms and chrysanthemums; locate Tokyo.

Study India; name the two large rivers in it and tell of the superstitions concerning the Ganges; speak of the jungles; locate them; discuss the animals found there. Describe the dress of the people; their homes, food and customs; the poppy fields, wheat fields and cotton fields. What animals are used here? Tell stories of the elephant's intelligence and faithfulness.

Locate Calcutta and Bombay.

Where is Persia? Arabia? Where is the fertile land in Arabia? Describe the Arabs, their dress and manners, their homes, and horses.

Locate Palestine and tell why people are interested in it. Where is Asiatic Turkey?

JUNE

First Week. The map of Palestine; Jerusalem; the Dead Sea. Egypt and the Nile; the Pyramids, Study map of the Nile; what is the story of the floods? Connect with Old Testament stories.

Ruins of Ancient cities; Cairo and Alexandria.

The Desert of Sahara.

Collect pictures of caravans; desert cities.

Second Week. What rivers in Central Africa? Tell the pupils that all of them contain falls and rapids which make them beautiful but prevent large boats from sailing on them. The reason there are so many falls is that Central Africa is a plateau about a half mile high. In descending to the sea level, the rivers must fall over high precipices. The falls in the Zambezi River are larger than Niagara and are a wonderful sight.

Explain that central Africa is very warm and has abundant rainfall. The climate, for these reasons, is unhealthful. White people cannot live easily in the lowlands. Tell the pupils that for a thousand miles, north and south, extends one of the densest forests in the world. It is similar to the jungle of the Amazon and very difficult to travel through.

Talk of the leopards, lions, and snakes found here, and how the color of their skins makes them appear part of the trees they crouch in, which enables them to capture their prey easily. Mention the larger animals also and tell how the natives hunt them, of the value of the elephant's tusks. The gorilla is much feared by the natives.

Describe the black people, their loosely built homes, their habits, and food.

Explain that European countries have explored parts of Central Africa and taken possession of them. Look at the map and learn what these countries are. Tell the story of David Livingstone.

Study South Africa, its climate, and people. Describe an ostrich farm, the color and value of the feathers. Speak of the rich gold mines and of the diamond mines here.

Sketch the map of Africa, locating mountains and rivers.

Third Week. Sketch the map of Australia; compare that continent in size with the United States.

Tell the story of the early prison settlements from England; the discovery of gold and the rapid settlement; the sheep ranches and wool production.

Describe Sydney and Melbourne; the sea south from Australia to England; study New Zealand and compare with the British Isles; also with Japan.

Fourth Week. The islands of East India owned by Holland, England, etc.

How the United States came into possession of the Philippines; rice production in the Philippines; story of Dewey.

A steamship journey across the Pacific from San Francisco to Japan; the Hawaiian Islands; climate and products.

Recall the story of Magellan's trip across the Pacific, and Captain Cook's voyages. Locate the chief groups of islands in the Pacific.

FIFTH YEAR

The fifth grade in this plan is chiefly devoted to an intensive study of important topics illustrating the geography of the United States. Important type studies are brought to the front and developed, with somewhat full descriptions and comparisons.

SEPTEMBER

The Hudson River: its physical character, highlands, Palisades; Adirondacks.

The cities, commerce and products, as, lumber, etc.

Relation to New York City and the Erie Canal.

Recall its history; the voyage of Hudson.

Washington and Arnold; Burgoyne's invasion.

Compare the Hudson River with the Connecticut, Penobscot, Rappahannock, James and other rivers on the Atlantic coast.

The Erie Canal: history of its construction; DeWitt Clinton.

Results of its use; products; effect on New York. (Consult Type Study, *Erie Canal*, on page 416.)

Compare the Erie Canal with other canals.

Effect of railroads competing with the canal.

Study the group of Middle Atlantic states.

Make a study of Philadelphia.

Recall the story of William Penn and the first settlement.

Boston: its history; public buildings; compare with other New England states.

Early history of settlements in New England.

OCTOBER

Type Study on *Washington*, the capital.

Plan of the city, and how it was carried out.

The Capitol building and the White House; the Congressional Library; other public buildings.

The three departments of Government.

Compare Washington with state capitals, as Albany, Boston, Richmond, Denver, etc.

The Allegheny Mountain system: the Blue Ridge and the parallel ranges.

The great valley of Virginia, Tennessee, etc.

The forests and mineral resources of the mountain districts; coal and iron.

The river systems, draining east and west.

The roads across the mountains.

Recall the Old National Road; Boone's Wilderness Road; Braddock's Road; railroads across the mountains.

The James River and Richmond.

Survey of the South Atlantic states.

Florida and fruit growing; winter resorts in Florida.

Truck farming along the Atlantic coast.

Sketch a map of the South Atlantic states locating rivers, cities, mountains.

NOVEMBER

Survey of Ohio Valley and Lake states.

Recall the history of the Northwest Territory.

Study Pittsburgh as a steel-producing center; a big steel mill, blast furnace and rolling mill.

Sources of iron in Lake Superior region: shipment of ores; lake steamers; shipment of steel products from Pittsburgh.

Other steel centers in the United States, as Cleveland, and the Lake Erie cities; Gary and South Chicago, Birmingham, etc. (See Type Study, *Lake Michigan*, p. 350, 357.)

Detroit as a manufacturing center: automobile companies; Henry Ford; recall the story of the Indian war and seige of Detroit; compare Detroit with Cleveland and Buffalo.

Chicago as a railroad center: chief railroad lines centering in Chicago; grain elevators and packing houses; fort Dearborn and early history; the Illinois and Michigan Canal: deep water way from Chicago to the Gulf.

The Upper Mississippi River: voyage from St. Louis to St. Paul; survey.

The dam and water power at Keokuk: cities of the Upper Mississippi; the Twin Cities.

DECEMBER

Survey of the Gulf states: the southern forest belt; the seaport cities and their trade.

The cotton belt and cotton production; sugar *and rice and salt production in the South.*

Type Study on New Orleans. (See page 393.) Compare with Jacksonville, Galveston, Mobile.

Study of the Lower Mississippi River: the river floods; their causes and effects; the building of levees and river control; Captain Eads and the jetties.

The great era of steamboat navigation; Mark Twain and Life on the Mississippi.

Import cities of the Southern states: Birmingham, Memphis, Nashville, Atlanta, Dallas, Houston and San Antonio.

Type Study on Chattanooga (See p. 460): its geographic location; its history during the Civil War; Lookout Mountain, Signal Mountain, etc.

Oil wells in Texas and Oklahoma; history of oil production in the Southwest. Pipe lines and railroad shipments.

Sketch maps of the Gulf states: compare climate and products with those in the Mississippi Valley and Lake Region.

JANUARY

States west of the Mississippi: general survey of physical features and climate.

Rivers flowing eastward and southeast to the Mississippi.

Recall the story of the Lewis and Clarke explorations.

The "49'ers" and the trip to California.

Study of Kansas as a typical Western state: early history and difficulties; the grasshopper plague and the drouths; the great wheat production; cattle and farm products; comparison with other Western states.

Oklahoma: the Indian Territory and its earlier history; the opening of Oklahoma; its rapid development; cities.

Dry Farming in the semi-arid region; products.

Cattle ranches and grazing in the West.

Denver and the Rocky Mountain states.

FEBRUARY

Take up the study of the Western states. Tell the story of Lewis and Clarke. In studying the surface, name and locate the noted mountain peaks. Make a study of Mt. Shasta. (See Type Study, *Mount Shasta*, page 362.) Study Yellowstone Park. (See Type Study, *Yellowstone Park*, page 436.) Study also the Yosemite Valley. Tell of the beautiful scenery along the Snake and Columbia rivers; of the Canyon of the Colorado. Describe the great irrigation dams recently built in the Great Basin. Let the class account for the dry climate of the plateau and for the salt lakes. Describe the desert. (See Type Study, *Irrigation*, Vol. VI, page 176.)

In making a study of the separate states, describe the salmon fisheries in Washington; the fruit ranches and lumbering industry in Washington and Oregon; the silver and lead mines of Idaho; copper mines of Butte and the wheat fields of Montana; the mines of Colorado; the gold mines, oil wells, orange groves and big trees of California. Tell of the discovery of gold in California and of the excitement thus created.

Make a special study of San Francisco and the Golden Gate. Discuss the distance from San Francisco to New York and how we may travel from one city to the other, what large cities we would pass through and the probable length of time necessary for the journey.

Study Alaska. Locate it. Tell its comparative size, describe it and the climate and tell why it is important. How did the United States obtain the country? Discuss its surface. Name and locate Mt. McKinley, the highest peak in North America. Describe a glacier and an iceberg.

MARCH

General survey of western half of the United States: the chief productive regions; gold and silver and copper mines; sheep raising in the mountain valleys; the Salmon Fisheries and river of the West; the great forests and lumbering of the Northwest.

The story of the Union Pacific Railway; other railway systems across the mountains.

The development of trade with Alaska.

Type Study of the Columbia River: its crooked course across the mountains and plains; the Snake River and irrigation; the mountain lakes; the lower Columbia; improvements at the mouth; jetties.

The Valley of California; fruit production in Oregon, California, etc.

APRIL

General survey of North America. Begin a careful study of North America. Locate it and tell by what waters it is surrounded. Study the indentations, the capes, peninsulas, the large lakes, the mountains and river systems. Teach the pupils to draw the map of North America. When they can do this well, let them make relief maps of papier-mache or salt. Teacher can prepare old newspapers for this work. (See page 326.) The salt maps are made by mixing two parts of salt and one of flour with enough water to make a thick paste which will mould easily in the fingers.

The maps should first be drawn with a pencil on heavy cardboard if the paper pulp is used, or on a light board if the salt is used. These maps should show the mountains, plains, lakes and river valleys. If the children possess water colors, they may color the rivers, lakes and coast line blue, making a very effective map.

In connection with the study of North America discuss the early explorers. Take up the stories of the Norsemen, of Columbus, Americus Vespucius, Magellan and Henry Hudson.

Teach the comparative size of the continent, the zones in which it lies and the climate of each one.

Note the irregular coast line of eastern North America. Explain that the Atlantic Plain is gradually sinking. This accounts for the many good harbors along this coast. Note the few good harbors on the Pacific coast.

Name and locate the large islands and the important groups of islands near North America. Take up the political division of the continent, beginning with Canada. Make a study of the highlands, the noted mountains, the plains, lakes and rivers. Study the climate, the natural resources of the country and the animals found there.

Tell the story of Champlain.

MAY

Study the industries of Canada: the production of wheat, sheep and cattle; lumbering; mining and fishing. Describe the Newfoundland fisheries.

Make a study of the most important provinces and of the large cities. Discuss the people who live in Canada. In connection with Nova Scotia, tell the pupils of the Bay of Fundy and of the tides; these rise to the height of 50 or 60 feet, and are the highest tides in the world. Tell them also the story of the Acadians whom the English deported at the close of the French and Indian War. If time permits, tell the story of Evangeline.

Study the following cities: Montreal, Quebec, Ottawa, Toronto, Halifax, Winnipeg and Vancouver. Tell the pupils of the railroad which connects Quebec and Vancouver. It is one of the longest railroads in the world. Make a special study of Quebec. Describe the city and tell the class something of its history.

Make a study of Mexico. Discuss its location, comparative size, the bays, gulfs and seas about it, the highlands, famous mountain peaks, climate, natural resources, products and cities. Study the people. Tell the story of Cortez and Montezuma.

Make a Type Study of the island of Cuba: its climate, mountains, products, cities; tobacco and sugar production; plantations; review of Spanish War and its results.

JUNE

Make a full study of the home state; compare and contrast with other states, near and far, using some such outline as follows:

Physical features and climate.

Size and importance in comparison with others.

Natural resources, mineral, agricultural; water power; manufacturing industries.

Population, history, settlement, immigration.

Early exploration and Indian troubles.

Cities, and their commercial or historical importance.

Waterways, highways, railroads.

State government and state institutions.

SEPTEMBER

Make a Type Study of the British Isles: their physical features and climatic character; the natural resources; coal and iron; the manufacturing centers for Birmingham and Manchester; Liverpool and the coastal harbor cities; Glasgow and ship building.

Recall the history of famous English men and women, as Cromwell, Elizabeth, Raleigh, Charles I, George III, Shakespeare, Tennyson, Scott, Dickens.

Compare the British Isles with Japan, New Zealand and other island groups.

London as a type study: historic buildings and places; its position on the Thames; inner harbors; its world commerce; its government and Parliament buildings; Westminster Abby and its monuments; comparison with New York and Washington.

OCTOBER

The British colonial possessions: early English explorations; Cabot; Hudson; the history of the East India Company in India; exploits of Clive and rule of Warren Hastings in India; British improvements in India in building railroads, and irrigation projects; the Indian Mutiny and present rule of England; the populations of British India; the Cape route and the Suez route to India; India a Crown Colony governed by Parliament.

Australia as a self-governing colony: early explorations and penal settlements in Australia; gold discoveries and rapid development; the union of the Australian colonies into a federated state; Australia compared with Canada as a self-governing federated state; free self-governing colonies of England.

The history of South Africa: the Dutch settlements taken over by the English; the diamond mines and rapid growth; the Boer War and its results; Livingstone in Africa; "The Dark Continent"; the results of the World War in Africa.

Other English colonies: the East and West Indies; New Zealand. The British colonial empire as a whole. Make a world map showing the British possessions and the trade routes between England and her colonies. (Consult Vol. V, page 295.)

NOVEMBER

The Spanish colonies. Review the story of early Spanish exploration; Columbus and the West Indies; Pizarro and Cortez.

Spanish colonies in North and South America: cruelty of the conquering Spaniards; the decay of Spanish power and loss of colonies; contrast with England's progress in colonization. The Dutch colonies: Java and the East Indies.

French colonization: French exploration and settlement in North America; the French in India and China; French colonies in North Africa. The Portuguese colonies: Brazil, etc.; the Congo state and Belgium. The German efforts at colonization. The results of the World War on colonies of European states; ocean routes to the colonies.

DECEMBER

France: its history and character. Study the map of France, and compare its territory and resources with those of Germany, Italy, Spain and other countries.

Character of the French people; famous French characters, as Louis XIV, Napoleon, Pasteur, Foch, Charlemagne, Joan of Arc.

The city of Paris as a type study: architectural and artistic improvements in Paris; the city of modern art; museums and schools of art; artistic shop windows and fashions; the artistic quality of French life and character; city improvements and sanitation; comparison with other superior cities, as Berlin, Venice, Rome.

The silk industry at Lyons, a type study: damage done in Northeastern France in the recent war and the rebuilding.

The Rhine River as a type study: its physiographic character; lakes in Switzerland; the castles along the Rhine; ancient churches as at Strasburg and Cologne; the fortified cities on the Rhine; results of the war; the commerce and cities on the Rhine; the history of the Rhine for 2,000 years; compare the Rhine with the Danube, Volga, etc.; compare the Rhine with the Hudson, Ohio, etc.

JANUARY

Germany at present: losses of territory from the war. Chief cities, Hamburg, Berlin, Frankfort, Cologne, Munich, etc.

Compare Germany with Austria: the break-up of Austria-Hungary into several states, namely, Austria, Czecho-Slovakia, Rumania, Jugoslavia.

Italy and the peninsula: the mountains and plains of Italy; review stories of early Roman history.

Rome, a type study: the Ancient City and its ruins; the Papal City; St. Peters and the Vatican; the modern city and capital of Italy.

The Study of Venice: its peculiar location; remarkable palaces and churches; The Grand Canal; the art treasures. Compare with Florence, and Rome and Paris.

Pompeii and Herculaneum: the buried cities; Vesuvius.

The City of Athens: the Acropolis and old temples and ruins; Pericles and his time at Athens. Recall the stories of Leonidas, and Alexander.

The Scandinavian States: Type study of the coast of Norway (page 373).

FEBRUARY

Study the map of Russia: the rivers and plains of Russia.

Petrograd, a type study. (Page 384.)

Moscow and the Kremlin.

Constantinople as a type study: history of this ancient city; the Church of St. Sophia, a mosque; the capture of Constantinople by the Turks; its commanding position on the Bosporous.

Comparison of Constantinople with other historic cities, as Rome, Athens, Jerusalem, Alexandria.

Make a study of the map of Southeastern Europe, noting new states and changes produced by the war.

Study the map of the Mediterranean Sea; chief islands; cities on this sea.

MARCH

General survey of the map of Asia: locate mountains, deserts, rivers, chief countries, cities.

The Himalaya Mountains as a study: compare with Alps and Rocky Mountains.

The Yangtse River as a type study.

The Chinese people: their history and character; their religion, customs, houses dress.

Pekin as a Chinese city: compare with other cities of China; the Chinese in America.

The Japanese Empire: the progressive character of the Japanese; their artistic manufactures, Japanese wares; the war with Russia; the city of Tokyo; the Japanese in the United States. Immigration.

APRIL

Siberia and the Siberian Railway.

Calcutta on the Ganges; other cities of India.

Jerusalem, the ancient city.

General survey of Africa: the mountains and river of Africa. The Nile River as a Type Study: history of the Nile; ancient ruins; temples and pyramids; the flood of the Nile; compare with the Mississippi River.

The Assuan Dam and modern irrigation.

The Congo River and Valley.

MAY

The Sahara as a type study: the physiography of the Sahara; the desert cities; the caravan and its march across the desert; the Bedouins, and the desert people. Compare with the Great Basin of the United States. French progress in the desert region. Compare with the deserts of Arabia, Gobi, etc. Recall the explorations of Livingstone and Stanley in Central Africa.

The city of Cairo.

The rearrangement of colonies as a result of the World War.

The Suez Canal and its influence on trade.

JUNE

General survey of South America: the political divisions; cities, etc.; the coffee plantation, a type study. (See Vol. VI, page 161.) The Amazon River, an equatorial river; the great forests and animal life; the rubber industry along the Amazon; the valuable woods obtained; compare the Amazon and Congo.

The city of Buenos Ayres: its commercial advantages; compare it with Rio de Janeiro; compare it with New York and New Orleans.

SEVENTH YEAR

SEPTEMBER

Begin the study of climate, dwelling upon the chief causes of temperature and rainfall. (See *Study of the Weather*, page 565.) Pupils of this grade should be able to understand the causes of wind and why winds from different directions cause change of temperature. They should also become familiar with the causes of rain and why certain winds bring rain and others clear skies.

When these principles are understood, consider the chief causes of their modification, such as altitude and the position of mountain ranges. In connection with this discussion make a study of the desert regions in the United States, so that the pupils will understand the causes for them.

Weather maps can be procured from the nearest weather bureau station or by writing the Weather Bureau at Washington, D. C. Procure enough to supply the class and teach them to read weather maps.

OCTOBER

Study erosion by water and by wind. Take the Mississippi River as a type of erosion by water. Make a careful study of the river basin and the channel of the river from its source to its mouth. This should include the extensive deposits of alluvium along the banks in the lower course of the river, the necessity for levees, the great delta and the jetties. (See Type Study, *Steamboat Traffic on the Mississippi*, Vol. V, page 284.)

Study the Grand Canyon of the Yellowstone and the Grand Canyon of the Colorado as different types of erosion. (See Type Study, *Yellowstone Park*, page 436.)

Study the work of wind on sand dunes and in the Bad Lands, South Dakota.

Study the work of ice during the glacial period, showing its effects upon the surface of North America. If the textbook does not contain the necessary information on this subject it is easily obtained from a physical geography. Study one or two glaciers in the Rocky Mountains and Alaska.

NOVEMBER

Study the great scenic features of North America—Yellowstone Park, Glacier National Park, Yosemite Valley, Estes Park, Pike's Peak, Mount Shasta, Niagara Falls, scenes in the Appalachian, Ozark and White mountains, the great glaciers and mountains of British Columbia and Alaska, the Great Lakes and the Saint Lawrence and Saguenay rivers. These studies are best made in the form of imaginary excursions. (See *Excursions*, page 320; *A Trip Over the Dixie Highway*, page 449; and Type Studies, *Yellowstone Park*, page 436; *Lake Michigan*, page 350; and *Mount Shasta*, page 362.) Pupils know but little about the grandeur and beauty of the scenery in our country, and a month devoted to this subject will be well spent.

DECEMBER

There are certain facts in mathematical geography that the class should now be able to understand. These include longitude and time and the standard time belts (see *Longitude and Time*, Vol. V, page 81); great and small circles; meridians and meridian circles; the motions of the earth and the change of seasons, including the varying length of day and night. Most advanced textbooks contain good explanations of these facts, but in teaching them one should make constant use of the globe. Teach only the most important facts relating to the change of seasons, otherwise the pupils will become confused. Devote the month to this phase of the work. Teach one fact at a time and be sure that the pupils understand it before proceeding to the next.

In connection with these topics study briefly tides and ocean currents. Under the latter note the general circulation of the water in each ocean and give special attention to the Gulf Stream and the Kuro Sivo, or Japan current.

JANUARY

The United States should now be taken up and reviewed, introducing more minute studies than were considered in the fifth grade.

Begin with the New England States. Give special attention to surface, climate, resources and industries. Why are these manufacturing states? Make a study of Boston, noting its historic features.

Use the following plan for the study of all large cities:

I. General Description.
    1. Location.
    2. Area.
    3. General plan.

II. Parks and Boulevards.

This topic should include all parks, playgrounds and prominent residential streets. Prominent features in the parks, such as conservatories, zoölogical collections, statues and monuments should be noted.

III. The Business Section.

1. Manufactories.
2. Prominent business streets, wholesale and retail.
3. Business blocks and leading banks.
4. Transportation facilities, railways, harbors, etc.

IV. Places of Historic Interest.

V. Public Buildings and Monuments.

VI. Institutions.

1. Educational.
2. Other institutions.

VII. History.

VIII. Population.

Compare with other historical cities, as Philadelphia, Quebec.

Locate the prominent seaports, railway and manufacturing centers. Note the location and extent of the principal railway lines in these states, and how they are combined into systems.

Make a special study of New York City, devoting several lessons to it and following the plan given above.

Study Philadelphia, emphasizing the historic features. (See *The Historic Element*, page 338.)

FEBRUARY

Study the South Atlantic and Gulf States. (See Type Study, *Cotton*, Vol. VI, page 150.)

A cotton mill in North Carolina.

Study Charleston as a type study; also Saint Augustine and Palm Beach.

Study Baltimore and New Orleans. (See Type Study, *New Orleans*, page 393.)

MARCH

Study the states of the Mississippi Basin. Because of their similarity these states can be studied as a whole. Note their value as an agricultural region, also their mineral wealth.

Make special studies of St. Louis, Chicago, St. Paul and Minneapolis, Duluth and Kansas City.

Study the great railway systems and lead the class to see the reason for the location of the chief railway centers.

Study the navigable rivers. (See Type Study, *Steamboat Traffic on the Mississippi River*, Vol. V, page 284.)

APRIL

Study the Rocky Mountain and Pacific States. Make a special study of irrigation in connection with the study of these states. (See Type Study, *Irrigation*, Vol. VI, page 176.)

Give special attention to the fruit industry in these states and describe the great orchards, orange groves and vineyards.

Study the lumber industry in Oregon and Washington. What other states are among the leaders in the industry?

Study Seattle, Portland, San Francisco, Los Angeles and Salt Lake City.

Locate on the map the great transcontinental lines of railways in the United States and Canada. Note the distance between New York and Chicago; Chicago and San Francisco; Chicago and St. Paul; St. Paul and Seattle, etc. How long does it take to go from New York to San Francisco on a fast train?

Describe the refrigerator cars and how fresh meat and fruit are shipped by fast freight.

MAY

Make a special study of your state, following the plan found on page 487. Enter into details of surface, soil and industries. Locate the chief cities; note their leading industries and the reason for their location. Study the transportation systems, railways and navigable bodies of water, and canals, if any.

If there are canals, learn how they helped to develop the state in its early years.

Make a sufficient study of the government of the state to give the class an idea of its organization and the chief duties of the different departments—legislative, executive and judicial. (See *Departments of State Government*, Vol. V, page 312.)

If such comparatively new features of government as the initiative, referendum, recall, city manager, have been adopted, find out something as to their operation in the state.

Note: If the course of study calls for the study of the state in any particular month, this work can be substituted for the work of that month as provided in these *Plans*, and the work of the other months can be moved ahead one month.

JUNE

Review the United States as a whole, giving special attention to its position as an industrial and commercial nation. Make type studies of such subjects as corn, wheat, cotton, iron and coal. (For the study of corn see Vol. VI, page 36.)

Study in this connection the commercial routes of the world. (See Type Study, *Panama Canal*, page 404.)

What countries compete with the United States in the markets of the world? Why?

Of what value to the United States are Porto Rico, Hawaii and the Philippine Islands?

What do you understand by strategic positions?

CHAPTER EIGHT

ELEMENTARY SCIENCE

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INTRODUCTION

1. **Scope of the Work.** Elementary science in the grades above the primary should include the study of those problems of life which for their solution depend upon a knowledge of the leading facts of the various branches of physical science. It is within the province of the elementary school to acquaint the pupils with the facts of these various branches of science which pertain directly to their welfare and happiness, also to give them some idea of the principles upon which classification depends and to lead them to recognize the most prominent groups in the vegetable and animal kingdoms.

2. **Importance.** The applications of science to life in the last half-century have changed our surroundings to such an extent that we practically live in a new world, and to live most advantageously in the present day one must understand these conditions.

The truths of science are universal. The problems that arise in science are the same in kind as those that arise in life. An understanding of the laws of nature and obedience to them are essential to health and happiness; the economic benefits to the country that might be derived from a knowledge of certain facts learned through the study of science would amount to hundreds of millions of dollars annually.

3. Relation to Other Branches. As science touches all phases of life, so the lessons in elementary science are more or less closely related to all other branches in the course of study. Many allusions in the reading lesson are explainable only by an understanding of the elementary principles of some branch of science. The science lessons also furnish excellent topics for oral and written descriptions, and they constitute the foundation of elementary geography.

The relation of science to literature constitutes one of the most fascinating features of the work. Since we cannot read Longfellow, Bryant, Whittier, Holmes and Lowell, among our own poets, or Tennyson, Wordsworth or others, among the English poets, without having our thoughts constantly attracted to the beauties and wonders of nature, we ought not, in the study of natural objects, to omit references to the beautiful descriptions found in the works of our great writers or in the works of those of less importance. This correlation can be easily arranged by having a group of pupils in the literature class study some selection which bears directly upon the topic in science that is under discussion. If you are studying clouds, have the literature class study Shelley's poem, *The Cloud*; if you are studying about frost, use the picture of the frozen brook in Lowell's *Vision of Sir Launfal*, in the same way. Many similar illustrations will occur to you. Some series of readers relate these lines of work very successfully, but the most comprehensive and useful of all books upon this feature of science work is Miss McGovern's,[1] which was compiled especially for this purpose.

4. Purposes. The chief purposes of the study of elementary science may be stated as follows:

(1) To make the child acquainted with his surroundings. By this we mean all those natural conditions—plants, animals, soil, climate and scenery—which combine to form environment.

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[1] *Nature Study and Relative Literature.* 332 pages. A. Flanagan Company, Chicago.

(2) To lead the pupils to see beauty in the objects of nature. Many people, even in the country, are blind to the beauty of the wild flowers, the songs of the birds, the ever-varying tints of the sky by day and the glory of the heavens by night. Children should be led to discover the beauty which is in the most common things, such as the plants and insects which they often crush under their feet; in finding this beauty they will also learn something of the harmony that exists in nature.

(3) "To prepare children for real life by enabling them to gain an understanding and mastery of the physical conditions of life and the many varied utilities of nature." This purpose is usually considered to be the practical or economic feature of elementary science, and it is a feature through which lessons on this subject win approval with a large majority of the patrons of the school. Such lessons lead the pupils to distinguish between the useful and the harmful in their surroundings. Some species of insects destroy crops and cause great damage. Certain weeds are harmful, because they spread so rapidly, and occasionally plants and animals are met that are harmful to man. Children should learn to distinguish between these classes of objects, how to propagate those that are useful and how to destroy those that are harmful.

(4) To remove fear and prejudice founded upon false ideas which, because of superstition, have been handed down from one generation to another. The majority of people hold foolish notions about many members of the animal kingdom. One is afraid of mice, and another, of bees. Nearly all persons are terrified at the sight of a snake, and much of the wanton destruction of life is due to this fear and prejudice.

Many people hold equally ridiculous superstitions concerning the moon, the weather, the number thirteen, thunder and lightning, and various other phenomena. If children obtain an understanding of the laws and phenomena of climate, and especially of storms, they seldom entertain such ideas, the possession of which is accompanied with more or less dread and worry.

(5) To lead the pupils to become self-reliant. In no subject can the pupil be thrown more completely upon his own resources than in elementary science. Here he must discover things for himself, test his own knowledge and prove his conclusions. Through this method of study he learns to trust his powers, and he acquires a feeling of certainty which gives him a degree of independence and self-confidence.

(6) To teach pupils respect for labor. This applies particularly to the seventh and eighth grades. A study of natural forces and laws and their products reveals to the child the universal law that only by its own activity can a living thing survive. Every living thing, from the lowest plant or animal to man, works, and it is only by its work that it can exist, grow and fill its place in the world. When this truth is impressed upon the mind it lends a dignity to labor which many young people never before realized.

(7) To develop character. This is the crowning purpose of all studies, and the one in elementary science towards which all the other purposes point. In the study of science the child is searching for truth; in the study of natural phenomena he acquires the habit of careful observation, and also the habit of making accurate statements concerning small things, both of which are important steps in leading him to a love for truth. As he discovers the usefulness of plants and animals, a spirit of kindness is developed which leads him to treat kindly and to care for those creatures that are more or less dependent upon him; naturally, as he comprehends the harmony running through nature and the majesty of natural law, he acquires a reverence for the Creator of all things.

5. General Directions. While it is not probable that all of the following directions will apply to each lesson, some of them will apply to all lessons:

(1) Every lesson contains a central thought, around which all others should be grouped. Find this thought in planning for the lesson, and so present the subject as to lead

the pupils to search for it until they succeed in finding it. The fact and truth thus discovered will give rise to one or more problems, the solution of which will tax the reasoning power of the pupils and also hold their interest upon the work. These problems can be brought to the attention of the pupils by directing their observation and then questioning them. Ask the children to watch a squirrel climbing a tree, then tell how it does it. How does the squirrel crack a nut? Did you ever find a squirrel's nest? Where was it? Of what was it made? A similar plan can be pursued with many natural objects.

(2) The central truth of the lesson usually has numerous applications. Either by questions or direction the pupil should be led to find them.

(3) In the study of a unit, first direct the efforts of the pupils toward determining the facts. All other questions are subsidiary to this, and depend upon it.

(4) Before beginning work in elementary science, learn what the pupils know upon the subjects to which the lessons pertain, unless you are already familiar with their previous work. A good exercise for determining this fact is to ask the class to write from memory the names of the wild plants which they know, the names of the insects and the names of the animals, both wild and tame, with which they are familiar. An excellent exercise for determining the ability of pupils to observe closely is to give each member of the class a small box of seeds of different varieties to sort, such as a dozen grains each of wheat, barley, oats, buckwheat or other seeds that are easily obtained and which somewhat closely resemble each other. If you have never tried this exercise, doubtless you will be surprised at the numerous failures in separating the seeds into the groups in which they belong.

(5) See that the pupils apply what they have learned.

(6) Keep yourself in the background. In no other line of work is there such an opportunity for the teacher to become an adept in the rare art of keeping herself in the background, and probably in no other line of work is this so essential to

success. The teacher who would secure the greatest results from her science lessons must lead her pupils by suggestion, while they apparently take the initiative. This does not mean that the pupils should take the lead in planning and directing the work. At all times the teacher must be the controlling force, but her power should be so skilfully exercised that it is seldom openly manifest.

6. Material. Elaborate apparatus is neither necessary nor desirable. Nearly everything needed can be made by the pupils and the teacher, or it can be purchased at nominal expense. An opera glass with large lenses is a great help in studying birds, and if each pupil can have a small magnifying glass for the study of insects, small flowers and minerals, the class will be able to do some work that otherwise it might not be advisable to attempt. Conveniences for collecting and storing specimens should be provided. Jars, bottles and boxes can usually be obtained without difficulty or expense, and many articles can be made as they are needed. There should be enough mounted needles to go around the class.

Colored charts of birds and animals are helpful, and a reasonable expenditure for them by the school officials is wise. However, they should not be purchased at the expense of the school library or other equipment which is more generally useful. Pupils should provide themselves with notebooks in which to keep a record of their observations. It is a convenience in handling if these are all of the same size.

STUDY OF CORN

7. Introductory. This plan is designed for a comprehensive study of the corn plant. Those parts of the plan which require close analysis and the observation of minute details, such as pollination and the rate of growth per day, should not be used with the younger classes.

The corn plant is one of the best for study because it is so large that all its parts can readily be seen, because the children can plant the seed and watch the growth through all stages from germination to maturity, and, finally, because from an economic viewpoint corn is our most valuable agricultural product.

From necessity, the lessons will be given at intervals, probably about once a week. At each lesson definite things should be decided upon for study before the next lesson, at which all observations should be reported. The last lessons of the spring or summer term should leave the pupils well prepared to carry on observations by themselves during the long vacation.

8. Planting.[1] (a) PREPARATION OF SOIL. Before planting in the field or garden, give a series of lessons on the conditions necessary for the successful growth of the crop. First, discuss the kind of soil best suited for corn. In the locality in which you are is corn more generally planted in the valleys, along streams or on the higher land? What do you know about the amount of moisture it requires?

After the discussion of the soil best suited to the crop, take up the matter of preparing the seed bed. What sort of preparation does the soil need? The answer to this question leads the pupils to see the necessity of using fertilizers, to determine whether deep or shallow plowing is the better, and what should be done to the soil after plowing, before the crop is planted.

(b) TIME. What is the proper time for planting corn? Why is corn usually planted later in the season than oats, wheat or potatoes?

(c) SELECTION OF SEED. If your school is located in a region where corn is generally grown, have each pupil bring to the class an ear of the best corn which he can procure. If all ears are satisfactory, let each pupil select his seed from the ear which he has brought, or if the pupils prefer, let them exchange ears and then select seed. Discuss this selection carefully, leading the pupils to see why the kernels should not be taken from the tip or the butt of the ear.

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[1] If the pupils have not studied the germination of corn, plant in window boxes enough to supply the class and study at frequent intervals until the plants reach the surface.

If the pupils have never studied germination, plant in other boxes or the school garden, beans, peas, squash or cucumber seed and onion seed. Fill several glass fruit jars with water, place some cotton batting on the water and upon it place a few seeds of each kind. Place others between sheets of moist blotting paper and cover with a plate. Watch the progress of these three groups of seeds from day to day and observe the different plans of germination.

(d) IMPLEMENTS. In planting the corn in the school garden or the home garden, what tools are used? If the farmer has a large field, what machine does he use? Why? These questions will lead to the discussions of various tools, doubtless ending with an explanation of the working of a corn planter. Pupils living in a corn-growing region are familiar with these implements, and with them much of an explanation will not be necessary.

(e) PLANTING THE CORN. When all preparations are made, ask the pupils to plant their corn. How deep should the seed be covered? Why? How far apart should the hills be? Why? If you have a school garden, the study should center around the corn planted there, and as much space should be devoted to the crop as will be necessary to enable the class to have all the corn they will need for study. Probably from ten to twenty hills will be ample. This, of course, can be determined by the number of pupils in the class. In addition to the corn in the school garden, each member of the class should plant a small patch in the home garden, at least from six to ten hills. The older boys should be encouraged to plant as large a patch as they can care for. Each pupil should be asked to plant one hill at least one hundred feet from any other corn. After the plants have started, this hill should be thinned to one stalk, and it should be as carefully cultivated during the season as the others.

9. The Growing Plants. Study should begin as soon as the corn appears above ground. Lead the pupils to see the manner in which the leaf is rolled and to watch the plants from day to day, so they may discover the gradual unfolding of the leaves. It is well to have sketches made of the plants when they first appear above ground and again after about a week. (The accompanying illustration is that of a young plant.) These drawings should be made in a notebook in which all other corn observations are recorded. Do the new leaves start above or below the old leaves? How are the leaves attached to the stalk? (They form a sheath covering nearly the entire joint from which they spring.)

At the second examination it is well for each pupil to have a plant before him, but all further study should be confined to the growing plant where it stands.

The study of the stem naturally follows that of the leaf. A few questions will lead the children to see that the stem is slightly concave on one side, that the new shoots are smooth and the older ones rough because of the enclosing sheath, and that the stalk is jointed and enlarged at the end of each joint. They will soon discover also the different colors, varying from green to dark purple. How does the stem increase in length? Does it grow from the upper joint only or do all the joints grow? Which part of each joint grows? Why does the leaf sheathe this part? Why is this point tender? How does it taste? Why? How can you ascertain these facts? These problems will lead the class to see that they must make very careful and systematic observations. If the pupils are asked to measure the different joints in the stalk at regular intervals and keep a record of these measurements, they will be able at the end of the season to tell just how much each joint increased in length and also at what time in the season the growth was the most rapid.

Such a record is easily kept. Have the pupils select a number of stalks to be measured and fasten upon each of these, in a manner that will not injure them, a little numbered tag, as 1, 2, 3. Number the joints from the bottom upward as they develop. Having done this, the record can be kept on a page of the notebook ruled in this manner:

GROWTH OF JOINTS IN INCHES

STALK I

DATE	JOINT I		JOINT 2		JOINT 3		JOINT 4		JOINT 5		JOINT 6		TOTAL	
	Length	Growth	L.	G.	L.	G.	L.	G.	L.	G.	L.	G.	L	G.
6/1	8		6		5								19	
6/8	8½	½	6¾	¾	6¼	1¼							22½	3½
6/15	8⅞	⅜	7⅜	⅝	7¾	1½	1¾	1¾					30	7½

Since successive joints are added as the stalk increases in length, the later observations will contain a number of joints that do not appear at first. Construct a similar table for each stalk measured. At the end of the lesson compare the tables and see if you can tell why one stalk has grown more than another.

10. Tillage. When the plants are about six inches high, ask the pupils what must be done to them. What tools shall be used for this purpose in the garden? If the farmer has a large field, what does he use? Why? Why is tillage necessary? Doubtless all the pupils will see that the crop is cultivated to kill weeds, but it is quite probable that only a few, if any, understand the necessity of cultivation for the purpose of conserving moisture. This fact should be dwelt upon until all members of the class understand how the earth mulch prevents evaporation. A third reason is that plants throw off waste matter, poisonous to themselves. Cultivation makes the soil porous, and thus assists in oxidizing this matter, which, if allowed to accumulate in the soil, is injurious to the plant.

After the first tilling, the class should observe the plants from day to day, and the time for the second tilling should be determined upon in class, as far as possible. This is easily settled for the corn in the school garden, but home crops may vary so widely, because of conditions of soil and moisture, that it will be necessary to till some sooner than others.

As the season advances, the time to cease tilling should be determined upon. Ask the class why it is better to "lay the crop by" at this time. In answer to this question you should obtain the following facts: In fields where cultivators are used after the plants are half grown, the teams break the leaves, and, a still more important reason for ceasing tillage at this time, the cultivator disturbs the roots and reduces the productivity of the plant.

11. Flowers and Fruit. The pupils should be directed to watch for the appearance of the ears on the plant. Ask them to notice from what points on the stalk the ears grow and by questions lead them to see that the ear is an altered branch. Which ears appear first?

When the ears are formed, have each pupil break one from his plant and bring it to the class. Study the parts. Notice that the bracts, or husks, as they are commonly called, are altered leaves. Call attention to their arrangement on the shortened joints of the ear. Notice how they differ from the other leaves of the plant. What purpose do they serve? The husks overlap each other so as to protect the seeds from water and from birds.

Strip the husks from the ear carefully, so as not to disturb the silk. Have the pupils trace these fine, hair-like organs from the end of the ear to the point from which they started. In doing this the children will discover that each thread of silk is joined to a rudimentary kernel. Tell the children that the silk is a hollow tube with an opening at the outer end which is exposed to the air. Why are these outer ends so sticky?

Following the study of the silk, study the tassel. Note the difference in structure between the tassel and the silk. The tassel is made up of spikes of staminate flowers. The ear is a single spike of pistillate flowers, each thread of silk being the style of a single pistil. The pupils will need to watch the development of these two sets of flowers and to notice how the pollen is scattered. When they discover this they can tell why the ends of the silk are sticky. What would be the effect if all the tassels were cut off before the blossoms opened? The study of pollination should seldom be carried beyond the point of the contact of the pollen with the silk. The other part of this process requires too minute study for children.

12. The Complete Plant. Lessons on the complete plant should be given soon after the opening of the fall term. The class should have before them several of the best plants that they have grown, taken from the ground so as to preserve the root system as completely as possible. This can be done by digging around the plant with a spade, lifting it bodily from the ground, gently loosening the soil around the roots and rinsing off the adhering particles. In connection with these stalks each pupil should also bring one of the stalks which he planted far from the others.

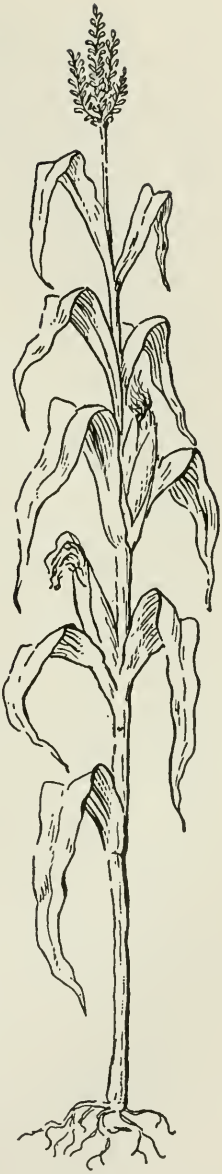
(a) BEAUTY. Notice the plant as a whole—its long, straight stem, its curving dark green leaves and its ears hanging gracefully down, which make it one of the most beautiful of plants. The many beautiful designs for decoration which can be made from corn should also receive attention. Encourage the pupils to invent designs and decorate the schoolroom with corn. After this is done, have a harvest festival and invite the parents.

(b) MEASUREMENTS. Measure the height of each stalk before the class. How many days between the date of planting and the day on which the plants were taken from the ground? What has been the average growth in inches per day?

If convenient, have the plants weighed. At the average weight of these specimens, how much plant food is taken from the soil by an acre of corn? This problem can be solved with sufficient accuracy for all practical purposes in the following manner: Have the pupils cut into small pieces the stalk that has been weighed; place these in a skillet with a loosely adjusted cover, and heat over a fire until nothing but white ash remains. Then weigh the ash. The difference in weight approximates quite closely the weight of matter which the plant extracted from the soil. Have the pupils count the stalks on a patch one rod square; then multiply this number by the number of square rods in an acre, and multiply the product thus obtained by the weight of the matter extracted from the soil by a single stalk. When they have solved this problem, the pupils will realize as never before the value and necessity of fertilizers.

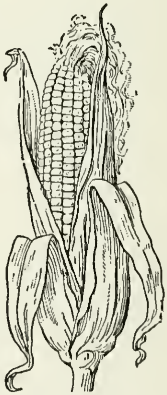
With mature classes the sources of food and the means by which this food is taken up and assimilated by the plant can be discussed with profit, but the teacher who would attempt this must have a reasonably thorough understanding of plant physiology, for the lessons will give rise to questions which, without such knowledge, she will be unable to answer.

(c) THE ROOT. Notice the extent of the root system, but in connection with this impress upon the pupils the fact that not all of the roots are attached to the specimens, since in their reaching out for nourishment the finer roots extend for several feet in all directions, and in removing the plant from the ground these are cut off. How do the roots compare with one another in appearance? Do any roots start from the stalk above ground? If so, what is the special use of these roots? Why is the stalk so large at the bottom? The answers to these questions will lead the pupils to see the adaptation of the plant to the strain that is placed upon it in case of a high wind or storm.



THE CORN PLANT

(d) The Stalk. Study the structure of the stalk. Cut one or more of the stalks across, so as to expose the cross-section, and split one or more of the others lengthwise. Notice the different parts—rind and pith. The difference between these parts is that in the rind the bundles of fibrous tissue are smaller and closer together than they are in the pith. Compare the cross-section of the stalk with the cross-section of the branch of some tree. Lead the pupils to see that the stalk contains bundles of fiber scattered through the pith, but that its great strength is in the outer walls, while the branch of the tree is constructed on an entirely different plan. The corn is an inside grower, or *endogen*, while the branch is an outside grower, or *exogen*, because the new wood comes outside of the old wood, though beneath the bark. Why is the stalk so porous on the inside, and why is it solid at the joints? The answers to these questions lead to the principle in physics that a hollow tube has greater strength than a solid rod containing the same quantity of material, as a stove pipe six inches in diameter will sustain a greater weight without bending than an iron rod of the same length containing the same amount of iron. The solidity at the joints prevents the stalk from being easily bent or crushed; hence, in the combination of these two principles the greatest possible strength is given the stalk for the amount of material that it contains.


THE EAR

13. The Ears. How many ears on a stalk? How many on the stalks that were planted away from the others? How do the ears on these stalks compare in development? Now break the ears from the stalks, strip off the husks, and compare the ears. Count the rows of kernels. How many in each ear? Are all the ears equally well filled? If any are defective, what is the cause? The answer to this question will lead to a review of the planting, tillage and other conditions of growth during the season. Out of this discussion the pupils should see that those plants which had the best care, other things being equal, produced the best ears.

14. Varieties. After the class has made a thorough study of the plants with which they began, you should take up and discuss with them the different varieties of corn. Let them procure all the different kinds they can in the neighborhood. Doubtless they will be able to bring specimens of sweet corn and, in some localities, of popcorn. When all these collections have been made, the different varieties should be compared as to color, size, structure, and the length of time required for the plants to reach maturity.

After these questions have been settled, you should add the names and descriptions of such varieties as the pupils have not been able to obtain and lead them to see that each variety is specially adapted to the locality in which it is grown or the purposes for which it is raised. For instance, the large dent corn succeeds only in that portion of the United States which has long, warm summers, while the flint, or hard yellow corn, will mature as far north as the central part of Minnesota, and has always been the corn grown in the New England states. This variety succeeds in these localities because it does not require so long a season. Sweet corn is specially adapted to be eaten green and also for canning, while popcorn is grown as a luxury.

15. Where Grown. Under this topic the geography of the corn region of the United States should be discussed and the pupils should understand what the great corn states are, also that corn is grown to a greater or less extent in every state in the Union. Following this, notice its cultivation in other countries, particularly in southern Europe, northern Africa and in Asia.

16. Uses. (a) HUMAN FOOD. Under this head discuss the manufacture of corn meal and the different articles of food prepared from it, such as corn bread, hominy and mush. The next important product is corn starch, in the manufacture of which several million bushels of corn are used each year. Numerous breakfast foods are also prepared from corn.

(b) FODDER. Lead the pupils to see that in the states where the most corn is raised, large numbers of cattle and hogs are fattened from fodder in the form of stover, and that it is especially valuable for feeding milch cows. This will lead to the study of the process of preparing this fodder by chopping it and placing it in air-tight enclosures called silos.

(c) OTHER PRODUCTS. The other uses of the grain are the manufacture of glucose or corn syrup, alcohol and other distilled spirits and corn oil. From the oil a variety of vulcanite, or corn rubber, is made.

(d) STALKS. The stalks are often used dry by farmers for fodder for cattle, and the pith is used in the manufacture of smokeless powder and for packing beneath the armor-plate of battleships. If a ball pierces the armor, the cornstalk pith swells and fills the opening so that the entrance of water is largely prevented. Other portions of the stalk are valuable in the manufacture of paper. The husks are used for the manufacture of paper, for filling mattresses and for packing fruit and other articles. In localities where corn is raised in large quantities and coal is scarce, the cobs are often used for fuel. Thus all parts of the plant are of value to man, and because of the great variety of uses to which it can be put corn is one of the most valuable of all the agricultural products.

17. Classification. Compare the complete plant with complete plants of wheat, oats and timothy or other grasses, for the purpose of having the pupils notice the points of resemblance in the general structure and manner of growth of these respective plants. By directing their attention to the structure of the stems, the way in which the leaves form sheathes around the stems, the general resemblance of the leaves and the joints in the stems, you should lead the pupils to see that in general structure all these plants resemble each other so closely that they must be members of one family.

All are grasses, but corn differs from the rest in having stamens and pistils on separate parts of the plant.

18. History. These lessons should bring out the facts that corn is a native of the warmer portions of America; that it was first made known to white men by Columbus, who, on the return from his first voyage, carried specimens of it to Spain; that for centuries it had been one of the chief articles of food for the American Indians and that the most advanced tribes, especially those in Mexico, were successful in its cultivation; that it was for many years one of the chief sources of food of the early colonists, especially in New England; that its development and perfection have been due to cultivation by white men, and that soon after its discovery in America it was introduced very generally into the countries of northern Africa and from there into Asia. The nations in southern Europe did not begin the extensive cultivation of corn for a long time after it was introduced into Spain by Columbus.[1]

19. Literature. The lessons on history afford the best opportunity for introducing the literary selections bearing directly upon corn. The most important of these are the Indian legend of the origin of corn, as told in *Hiawatha* (see "Hiawatha's Fasting" and "The Feast of Mondamin" in the poem). Following this are Whittier's *Huskers* and *Corn Song* and Celia Thaxter's *Maize for the Nation's Emblem.* These poems, at least, should be studied at this time, and selections from other writers can be used if time and opportunity afford. (See Section 3.)

20. Economic Study. The corn crop of the United States amounts to about 2,500,000,000 bushels each year, or four-fifths of the entire crop of the world. Were the corn of the United States all gathered into one huge pile, it would fill a trench thirty-five feet wide and thirty-five feet deep and extend from New York City to a point fifteen miles west of Buffalo.

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[1] In Europe generally, the word *corn* is applied to wheat and other cereals, the name *maize* being given to Indian corn, from the Indian word *mahys*.

Harvesting the corn and preparing it for market require the labor of the entire rural population of the great corn-producing regions for several weeks. Harvesters which cut the stalk from the roots, break off the ears and husk them are now in use, though the greater part of the harvesting and husking is still done by hand. From agricultural implement dealers, you can get pictures of the different corn harvesters, if the children are unable to see the machines.

After husking, the ears are placed in cribs, which are long narrow sheds, having their sides made of narrow boards with openings between them for the passage of air so that the corn can readily dry. When dry, the corn is shelled or thrashed by machines driven by steam or gasoline engines. One machine will shell from 2,500 to 4,000 bushels a day. Only shelled corn is marketed. This is placed in local elevators or shipped to the great trade centers, such as Chicago and Buffalo, where it is stored in large elevators until needed.

A bushel of shelled corn weighs 56 pounds. The largest freight car will carry 60,000 pounds. How many cars will it require to move the entire crop of the United States? Allowing 40 feet to a car, how long a train would these cars make? At 50 cents a bushel, what is the value of the crop? Learn from the latest crop reports the number of bushels raised in the leading corn-producing states. Have the class draw a map of the United States and locate the corn belt upon it, then write in each state the number of bushels produced.

21. Applications. This plan can be used to study wheat, cotton, rice, oats, barley, flax, beets, potatoes, and all other important agricultural plants, with only such modifications as the difference in the nature of the study of the plant requires. The pupils should be able to use this entire plan, and before they leave this grade they should acquire a fair knowledge of all the great farm crops. (See *Coal*, pages 219–221, Section 8.)

(a) PLANTS. Such plants as the violet and the morning glory are simpler and require less detail; they are therefore suited to the work with younger classes. The sunflower, the dandelion and other composite flowers should be studied by the older pupils.

Each class should study a few new plants each season. The plants should be selected and the work so planned as to have each series of lessons take up plants that are more complex and include more details of the plan, until the highest grade is reached. By making selections to include the most important families of plants, namely, the Crowfoot Family, the Rose Family, the Mustard Family, the Pulse Family, the Composite Family, the Mint Family, the Violet Family, and the Lily Family, the pupils when through the grammar grades should know the most prominent characteristics of these Families, and be able to recognize and name several plants belonging to each. With the older pupils the adaptability of plants to the regions they occupy should be brought out. A grass grows quickly, comes to early seeding and dies. These peculiarities make grasses the characteristic vegetation of regions of spring rains and long, dry summers, as forests are characteristic of rainfall well distributed through the year. When these facts are understood, the pupils can readily give the reason for grassy plains or forests in any particular region of the world.

(b) *Trees.* How many of our common trees can your pupils tell by their leaves? By their bark? How many kinds of wood can they name from the grain? How many trees can you recognize by these tests? The older pupils, especially, should be encouraged to study the trees of the locality. The features to study are the leaves, flowers, fruit, bark, buds, arrangement of branches and general form. On the page are drawings of the leaves of our most common trees. Ask your pupils to make collections of leaves, then compare their specimens with these drawings. How many can they identify? The drawings are models and have no imperfections. Lead the pupils to see that many of their leaves are imperfect, but that in general outline and structure they conform to the models.

The winter is a good time to study the arrangement of branches. Lead the pupils to discover the two general plans of structure, that represented by the pine and the beech, in which the trunk or bole extends to the top, and the other represented by the maple and the elm, in which the trunk divides in large branches, forming a large and beautiful crown or top.

The study of the bark and wood of the native trees is another interesting line of work for the older pupils in winter. A recognized authority on the trees of North America says this concerning the bark:

> Bark is a distinguishing character of many trees — of others it is confusing. The sycamore, shedding bark in sheets from its limbs, exposes pale, smooth under bark. The tree is recognizable by its mottled appearance winter or summer. The corky ridges on limbs of sweet gum and bur oak are easily remembered traits. The peculiar horizontal peeling of bark on birches designates most of the genus. The prussic-acid taste of a twig sets the cherry tribe apart. The familiar aromatic taste of the green twigs of sassafras is its best winter character; the mitten-shaped leaves distinguish it in summer.

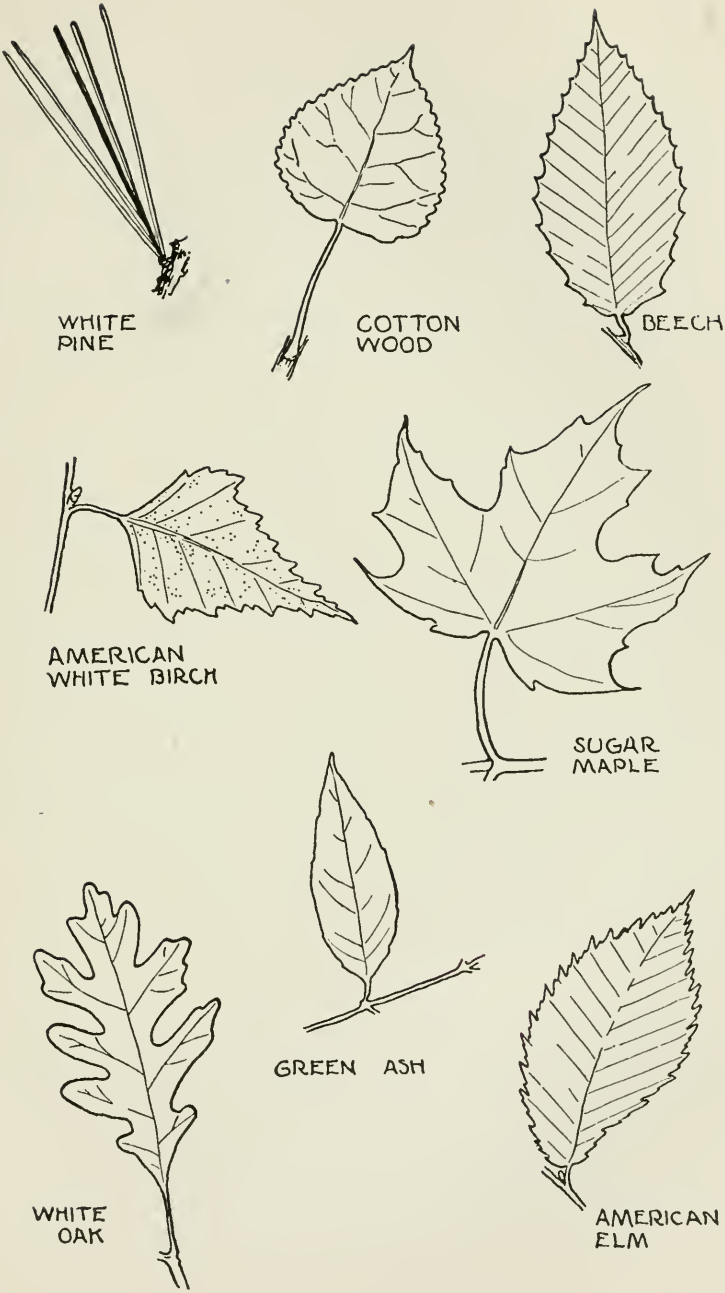
Study the wood. Take a cross section of the trunk of a small tree or of a branch and notice the arrangement of the light-colored sapwood around the dark-colored heart wood. Split a section of this trunk or branch through the center. If the wood is green allow it to dry several weeks, then have the boys smooth and polish the surface so that the grain can be distinctly seen.

22. Aids. The following books are helpful for both teacher and pupils:

Corn Plants: Their Uses and Ways of Life. Sargent. 106 pages. Houghton, Mifflin & Company. This is a concise history and description of the cereals used for food. The illustrations are numerous and helpful and the text contains much valuable and interesting information.

Great American Industries, volume on *Products of the Soil.* Rocheleau. 200 pages. A. Flanagan Company. This volume contains chapters on lumber, sugar, cotton, corn and wheat. Each chapter is a good type study of the subject treated.

By the same author, *Geography of Commerce and Industry.* 416 pages. Educational Publishing Company.



LEAVES OF COMMON TREES

Special Method in Elementary Science. C. A. McMurry. This work contains an excellent lesson on corn as a type study. For full description, see page 571.

The teacher should have the following publications from the United States Department of Agriculture:

Farmers' Bulletin No. 298, *Food Value of Corn and Corn Products.*

Farmers' Bulletin No. 80, *Corn Culture in the South.*

From the Illinois Agricultural Experiment Station, Urbana, Ill., obtain Bulletin No. 87, *The Structure of the Corn Kernel and the Composition of its Different Parts.*

Bulletin No. 96, *The Testing of Corn for Seed.*

Bulletin No. 100, *Directions for the Breeding of Corn.*

Bulletin No. 113, *Shrinkage of Ear Corn in Cribs.*

Also from the Agricultural College Extension Department, Urbana, Ill., the pamphlet entitled *Studies in Corn and its Uses.* This is especially valuable for the information which it contains about corn products and for plans for specific study of different parts of the plant.

From the Iowa Agricultural Experiment Station, Ames, Iowa, procure Bulletin No. 77 of the Agronomy Section, *Selecting and Preparing Seed Corn.*

All bulletins published by the United States Department of Agriculture can be obtained free of cost by addressing the Secretary of Agriculture, Washington, D. C. Bulletins of state experiment stations are free to all within the state in which they are published, and most stations send them to teachers in other states free of charge. If any charge is made, it is merely nominal. For state bulletins address the director of the agricultural experiment station of the state in which the bulletin is published.

THE STUDY OF BIRDS

23. Value. Birds, with their beautiful plumage, elegant shapes, graceful motions and sweet songs, are always a delight to children and to such grown persons as have had their souls opened to the charms of nature's most beautiful creation. In school work nothing can be more inspiring, and nothing better calculated to bring the teacher and pupil into ready sympathy, than an enthusiastic inquiry into the lives and habits of our friends of the air. Besides training the eye to observe quickly, the mind to perceive accurately, to classify and to judge, bird study gives the finest training to the aesthetic and unselfish emotions. Admiration for the beautiful forms and charming ways of the birds grows rapidly into love for them and sympathy with the hardships of their existence.

24. Time. There is no time during the school year when the study of birds cannot be made interesting. After the Christmas holidays the teacher may give occasional lessons in bird structure, teach the principal parts of a bird and assist the pupils to identify the permanent residents. This will take up the time approximately to the first of March. From then until the middle of May, a few minutes may be given daily, for the transient visitants and the summer residents come thick and fast. Bird songs, nesting habits, young birds and kindred topics occupy the time till the close of school in June. The autumn migration comes with the opening of school; but autumn and early winter may better be given to studying the relation of birds to man. (See Volume VI, page 139.)

25. Structure. For studies in structure and parts, a living bird is desirable in the schoolroom. A stuffed specimen is good, and its lifelike appearance will give zest to the study. A bird skin, however, will answer the purpose. If a dead bird is used, it should be treated with respectful tenderness by the teacher and handled gently by the pupils. There will be no difficulty in getting a specimen for study, if the pupils watch for it. In default of a better specimen, a pigeon or a chicken will answer well. Don't ask any pupil to kill a bird. Perhaps, however, you can have an English sparrow killed; but do not use the specimen if it is bloody or disgusting in appearance, unless you wish to create repugnance and point a lesson in kindness. With specimen in hand, study it from the plan given on pages 528-529. You ask the questions and let the children answer from examination of the bird. Encourage them to find out or to see that the answer is not yet determinable.

Do not carry the study too far with the class nor allow it to drag. Ten minutes is a long time for such a study as is outlined, if you become familiar with the form. Apply it to many birds, and always compare. Teach the pupils to study living birds (as many as possible) at home and in the field. The pigeon, hen, turkey, duck, goose, canary bird, parrot, blue jay, robin, woodpecker, chickadee, crow, and English sparrow, at least, may be studied almost anywhere.

26. Teacher's Preparation. The teacher should have a much more extended knowledge of birds than it is possible for her to present to the class, because this additional knowledge will enable her to answer many questions and give interesting information which would be impossible without it. The following diagram and outline, therefore, are given for the express purpose of guiding the teacher in her study. The diagram can be used with the class for the purpose of teaching the children the prominent parts of a bird, such as head, beak, crown, neck, throat, back, breast, wings, upper tail coverts, under tail coverts, primaries and secondaries. With beginning classes only the parts first named should be considered. The outline should not be used with the pupils; let them study after the plan given under *Field Work*, Section 31.

I. HEAD. Size? Shape? Height of forehead? Crest? Carriage?
  1. *Bill.* (Two mandibles.) Length? Width? Height? Shape? Tip? Nostril? Marks? Does the opening between the mandibles extend back beyond the base of the bill? Tongue?
  2. *Eye.* Position? Shape? Arrangement of feathers around it? How many lids? (Three.)
  3. *Ear.* Position? Arrangement of feathers?

II. NECK. Length? Carriage?

III. BODY. Shape? Size and shape of breast? Back? Length? (The length of a bird is the distance from the tip of its bill to the tip of its tail when the bird is lying flat on its back with its bill stretched backward.)

IV. WINGS. Joints? (Three.) Position of feathers? Length of outstretched wing to tip of feathers? (Compare the length of the bird with the distance from tip to tip of outstretched wings.) Are the wings straight or curved?

V. LEGS.

1. *Upper Joint or Thigh.* (Does this extend outside of the general skin that covers the body?) Length? Do feathers cover it entirely? What portion is exposed?
2. *Middle Joint* or *Tibia.*
3. *Tarsus.* Length? Round or flattened? Feathered? Scales? (Compare the front with the back.)
4. *Toes.* Number? Position (on a level? Do they point forward or back?)? Joined or free? Webs or appendages? Nails (Number? Shape? Length? Character?)?

VI. TAIL. Length? Breadth expanded? Shape of end? (Compare outer and inner feathers.)

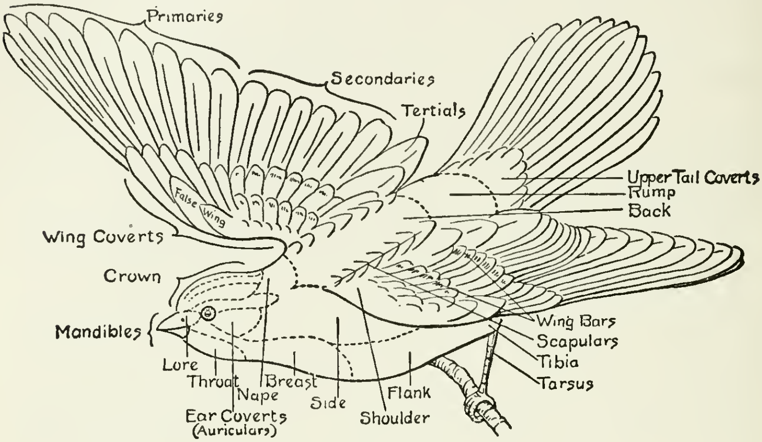
VII. FEATHERS. Color? Shape? Shaft? Vane? Symmetry? (Are the two sides alike?) Character (Rigid? Flexible? Soft? Satiny?)? (Select feathers from different parts of the body so as to get as great a variety as possible. Try to draw out the reasons for differences in shape and character of feathers on the different parts of the body.) Where are pin-feathers?

27. Written Exercises. The older pupils may be asked to copy the outline (Section 26) without questions and then to make a report on each bird they study by writing in the answers to the questions.

Require also written reports of these observations in your language classes. Teach the pupils to follow the outline, in order to have a logical arrangement, but to write smooth essays and to illustrate them by outline drawings of the bills and feet, at least.

28. Parts of a Bird. In describing a bird for identification, certain areas of the body are given specific names which may be learned from the diagram on page 526.

This may be placed upon the blackboard; pupils may copy it in their notebooks and then by drill lessons they must learn the words and be able to locate the areas instantly. While a complete diagram is here given for the benefit of the teacher, the attention of the class should be called to the most prominent parts only, as head, breast, wings, tail. There is danger that the inexperienced teacher will attempt too minute an analysis.



PARTS OF A BIRD

29. Classification. Birds may be separated into two great groups: first, those that live wholly upon land; second, those that live wholly upon the water or upon land and water. In most schemes of classification the water birds are placed first and are themselves separated into nine Orders. The land birds, which are grouped in eight Orders, comprise more numerous species and are the most easily studied. In determining to what Order a bird belongs, its bill, legs and feet are the things to be first noticed. In fact, by these alone most birds can be quickly assigned to their proper Order.

30. Land Birds. Land birds may quickly be classified into Orders by the following brief table:

Scratchers. Turkey, Grouse, Bobwhites. (Fowls.) Bill generally short, stout, hard and horny. Toes 4; hind one small, elevated above the front ones. (Live chiefly on the ground.) (Fig. 1.)

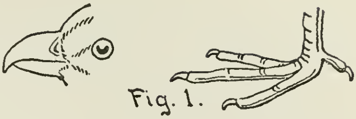


Fig. 1.

Pigeons. Pigeons and Doves. Bill rather slender, deeply grooved. Nostrils in a soft, fleshy membrane (cere). Toes 4, on a level; hind one as long as the shortest front one.

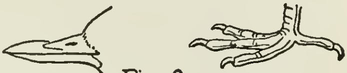


Fig. 2.

Birds of Prey. Vultures, Hawks and Owls. Bill very stout and strong; upper bill with a sharply-pointed hook. Toes 4, 3 in front; all armed with strong, sharp, curved nails. (Figs. 3 and 4.)

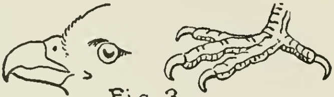


Fig. 3

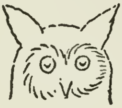


Fig 4.

Parrots. Bill strong; upper mandible projecting and strongly curved; cere. Toes 4, 2 in front and 2 behind. (Fig. 5.)

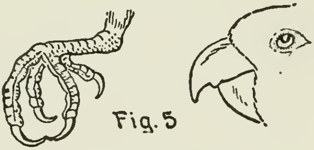


Fig. 5

Cuckoos and Kingfishers. Bill without a cere, straight or slightly curved. Toes 4, the middle and outer ones joined for half their length (kingfishers); or, 2 in front and 2 behind (cuckoos). (Fig. 6.)

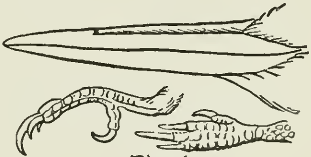


Fig 6.

Woodpeckers. Bill strong, straight. Nostrils more or less covered by bristles. Toes 4; 2 in front, 2 behind. Tail feathers stiff and pointed. Climb trunks of trees. (Fig. 7.)

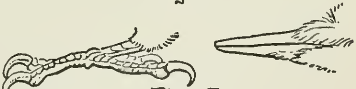


Fig. 7.

Swifts and Hummingbirds. Bills short, small, and mouth large; or, bill long and exceedingly slender and mouth small. Feet very small and weak. Seen almost entirely in the air. (Fig. 8.)

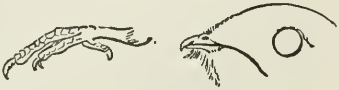


Fig 8.

Perching Birds. Bills various. Toes 4, without webs; all on the same level; hind toe as large as the middle one; nail generally longer than that of the middle one. (Fig. 9.)

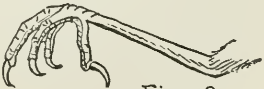


Fig 9

Among land birds the perching birds compose the great Order, and it is well to know the characteristics of the eighteen Families that compose it. These characteristics, however, may be learned as birds are identified one by one.

31. Field Work. The study of birds is preeminently an outdoor study and need not take much time from other school studies. The reports, the brief discussions, may be for the classroom; but the real work is done on the Saturday excursions, the Sunday walks, the trips to and from school and at recess and the noon intermission. When pupils have once been shown the charm of bird study, their sharp eyes will find material enough. If the teacher will but show a little enthusiasm herself, will only go out with the pupils and see, study and admire, all will be drawn together by a common interest, and the routine of the school will be much lighter.

In looking for birds, wear quiet clothing, especially avoiding white; go slowly and quietly; stand still and wait often for the birds to move. Keep the sun at your back, if possible, so you can be sure of the colors. Cloudy and rainy days are good, for birds never stay indoors long at a time. Early morning (before 7 a. m.) and late afternoon are the best times of day. But there are always some birds to be seen at any time. A good opera-glass is of great assistance, but it is not essential. Be *sure* in your sight or say frankly, "I don't know." It is very easy for anyone to be deluded into thinking that he sees what he expects to see.

32. Observations. It is always best to carry your notebooks with you and to record your observations on the spot where you make them. It is the easiest thing in the world to forget what you saw in those few exciting moments when you looked at the bird flitting about in the underbrush. Acquire the habit of making your notes systematically—setting down or remembering in order the facts you will need in identification. The following are the main points:

(a) SIZE. The size of a bird is his length. (See Outline, in Section 26.) Use a familiar bird as a standard—the crow, the robin or the sparrow. The English sparrow is 6 inches long. You can, then, always put your bird into one of three classes: (1) Birds about 6 inches long; (2) birds decidedly less than 6 inches in length; (3) birds decidedly over 6 inches in length.

(b) HABITS. Notice carefully the sort of place the bird haunts—thicket, orchard, meadow, forest, swamp, etc. Watch the manner of flight, the place of lighting, the habit of feeding, the attitude when at rest, the motions of head, tail and body, the height from the ground at which the bird is seen and whether it is alone or with others. For the beginner, so many things may be confusing, but soon you will learn to recognize in a great many instances the Family to which a bird belongs, by his behavior. These facts will help you:

(1) *Woodpeckers*, alone or in pairs, climb up and down tree trunks, bracing themselves by their tails, heads up; *nuthatches* have similar habits, but are smaller, more erratic in their movements and often work head-downward; the *creepers*, about the size of a nuthatch, but more slender, usually work spirally up a tree from the bottom and then fly to the bottom of another.

(2) *Wrens*, alone or in pairs, are little brownish birds that flit in and out of crevices and bushes, carry their tails erect, and while singing perch on bushes in open sight.

(3) *Kinglets* are our smallest birds, restless and inquiring, that come early in spring, often in scattered groups.

(4) *Warblers* are gaily colored little birds, nearly always in motion in trees and bushes. There are many species that come in great numbers and rather late in migration, and after a few days most of them disappear to the northward.

(5) *Swallows* are usually seen flying in flocks in long, graceful turns near the water, by cliffs or about barns and houses.

(6) *Flycatchers* sit erect and watch for their insect prey, darting quickly and unerringly at it and then returning to the same or a nearby perch.

(7) Sparrows feed on the ground, often in large flocks, fly short distances only, and have thick, strong bills for cracking seeds.

(8) *Thrushes* run about alone on the ground, stopping suddenly to listen; some are very shy and keep to the dense undergrowths; others, like the robin and bluebird, are bold and confiding.

(c) COLOR. The male birds of most species are brighter than the females, though in some the sexes are colored alike, and in a few species the female is the brighter. Moreover, the plumage of most birds varies greatly with the season, sometimes to such an extent that the species may not be recognizable in the unfamiliar plumage.. The young are often colored differently from the old, and some birds do not get their finest plumage till they are two or three years old.

When the male is known, you will know the female and young by their being associated with the male. They differ from the male in color, occasionally differ in size and usually in song. Watch carefully for any marked color patches (especially lines through or over the eye), eye rings, wingbars and white in the tail.

(d) NOTES. Birds have call notes, notes of alarm and, during the mating season, songs of joy. Listen carefully to what you hear and associate the note with the bird. Some birds sing while feeding, others never do; some sing while flying, as they start or as they alight; others are always silent when on the wing; some call loudly when alarmed, others slip quietly away without a note.

(e) PHYSICAL MARKS. The size and shape of the bill, feet and legs, the length of the wings and the tail, the shape of the tail and such other facts as may be recognized should be noted.

(f) DATE. The date at which you see the bird may help you greatly in the identification of the specimen, as the migrating birds are very regular in their appearance and departure. For instance, you may, if you live in the North Central states, expect to see kinglets in March, but no warblers before the middle of April.

33. Identification. You must not expect to make all the observations noted above on every bird; you will often have to content yourself with very few. But practice will enable you to see a great many things in a very short time; and in a majority of cases you can see enough to enable you to find the name of the bird in your book.

By far the best book for beginners in bird study is Chapman's *Bird Life*. Two excellent books for the identification of birds are two little pocket manuals in limp leather, by Chester A. Reed.[1] The birds are arranged in natural order. Each page contains a picture of the bird in a characteristic attitude, with the conspicuous patches in color. Besides the picture, there is on the page a brief description of the bird, its notes, its nest and its range. These are the practical, usable books that every beginner ought to have. They should be in the school library, and every teacher who wishes to learn about birds needs a set. If you can get but one volume, get the one on land birds. (For other desirable books for the library, see Section 43.)

34. Permanent Residents. Every locality has its little list of birds that remain throughout the year. These may be best recognized in the winter, when they are alone except for the few winter visitors from the north. In the latitude of Chicago and east of the Rockies, the following birds are about all that remain the year round. To the north the number will be less, to the south, more:

Bobwhite
Ruffed grouse
Red-shouldered hawk
Red-tailed hawk
Sharp-shinned hawk
Barred owl
Long-eared owl
Screech owl
Great horned owl
Hairy woodpecker
Downy woodpecker
Bluejay
Crow
American goldfinch
Purple finch
Song sparrow
White-breasted nuthatch
Chickadee

The flicker and meadowlark remain in some localities, and in others the waxwing passes the summer and the robin and bluebird the winter.

35. Winter Visitors. In the latitude of Chicago and east of the Rockies, some or all of the following may be seen as winter visitors:

Snowy owl
Prairie horned lark
Snowflake
Lapland longspur
Brown creeper
Redpoll
American crossbill
White-throated sparrow
Tree sparrow
Junco
Northern shrike
Winter wren
Golden-crowned kinglet

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[1] *Bird Guide.* Part I, Water Birds, Game Birds and Birds of Prey East of the Rockies. Reed. *Bird Guide.* Part II, Land Birds East of the Rockies. Both are published by Charles A. Reed, Worcester, Mass., and may be purchased at 75 cents each of A. C. McClurg & Co., Chicago.

36. Migration. The birds begin to arrive from the south late in February or early in March. The first birds come as soon as the weather permits, regardless of date, but the later birds arrive year after year on almost the same day. The height of the migration comes early in May and by the end of the month the migration is over. We cannot give a definite list that will be accurate everywhere, but the following approximation for the arrival of land birds in the vicinity of Chicago will be helpful. Not all the birds are listed, but these are common type forms or birds that are easily identified. North or south of the latitude of Chicago the birds will appear a little later or a little earlier. The names in italics indicate the birds most easily recognized.

March

FIRST HALF

Hairy woodpecker, *meadow lark*, *junco*, *song sparrow*, loggerhead shrike, *chickadee*, golden-crowned kinglet, prairie-horned lark.

SECOND HALF

Kingfisher, yellow-bellied sapsucker, *flicker*, phoebe, cowbird, *red-winged blackbird*, bronzed grackle, *American goldfinch*, fox sparrow, towhee, *cardinal*, brown creeper, white-breasted nuthatch, ruby-crowned kinglet, *blue-bird*, *robin*.

April

FIRST HALF

Mourning dove, marsh hawk, sparrow hawk, white-throated sparrow, *chipping sparrow*, field sparrow, tree swallow, winter wren, hermit thrush, red-breasted nuthatch.

SECOND HALF

Red-headed woodpecker, *chimney swift*, kingbird, least flycatcher, vesper sparrow, white-crowned sparrow, *purple martin*, swallows (3 species), black-and-white creeper, warblers (10 species), *catbird*, *brown thrasher*, *house wren*.

May

FIRST HALF

Whippoorwill, *night hawk*, *bobolink*, *Baltimore oriole*, rose-breasted grosbeak, indigo bunting, scarlet tanager, vireos (5 species), warblers (20 species), *wood thrush*.

SECOND HALF

Cuckoo (2 species), *humming-bird*, orchard oriole, flycatchers (4 species).

37. Pupils' Records. The pupils will enjoy reporting the birds they have seen. On the bulletin board or blackboard may be placed in March a form like the following, which can be filled in from day to day till the end of May:

NAME	DATE	OBSERVER	REMARKS			
			Number	Where	Weather	Later Reports
1. Robin	Mar. 7	Jas. Fay	1	Tree at home	Warm and clear	First nest found Apr. 1. First young seen Apr. 10.
2.						
3.						
4.						

Encourage each pupil to keep for himself in his notebook from the first of March a daily record, or at least records of a day's observations as frequently as three times a week. The records of March may contain but three or four birds for each day, but in early May a good, bright boy may see from fifty to eighty different species in a day. After the leaves come out thickly and the migration passes, his list will fall off remarkably. The following is a good form for these personal records:

PUPIL'S DAILY RECORD

(The birds marked * are those seen for the first time this year; those marked ** are identified for the first time.)

Weather. Cloudy and raw. Northeast wind.

Place. Northwest along Crooked Creek, to Smith's woods and return by way of Dead Pond.

Time. Noon to 5 P.M.

1. Downy Woodpecker—1.
2. Bluebird*—1.
3. Junco—10.
4. Prairie Horned Lark*.
5. Robin—3.
6. Song Sparrow—2.
7. Tree Sparrow—Big flock.
8. Loggerhead Shrike**—1.

These lists are written at the time the observations are made, though many pupils will wish to copy them neatly on their return and preserve them to compare with lists of another year. When new or unknown birds are seen, the pupil will write his description in place of the name, and will try to identify the bird from the books at school.

38. Nests and Young. Late spring and early summer bring nests and young, and with them the almost irresistible inclination on the part of the boys to "collect eggs." Everything possible should be done to show pupils the cruelty and foolishness of this craze (the teacher will succeed better if she wears no bird plumage on her hat), to engender sympathy for the mother bird in her many dangers, and to inspire pleasure in watching the birds while they are nest-building and raising their young. The great variety, the structure and location of nests, the differences in color, shape, size and number of eggs furnish innumerable opportunities for good lessons full of *whys* and *wherefores*, in which teacher as well as pupil may watch and wait and learn from nature.

39. General Suggestion. We have attempted to give a general scheme for bird study that is applicable anywhere and at all times. In fact, it is a perennial subject which no teacher can exhaust in one grade or in one year. Year after year, as spring comes around, the interest in birds will revive, and every year both teacher and pupil will add to the list of their bird acquaintances. If a boy leaving the grammar grades knows sixty birds at sight, he may have done well. Yet we have known boys of fifteen from city schools who, rising at daylight, tramped many weary miles into the country almost every Saturday during the season and who haunted the parks before and after school all the week. They shouted with delight over every new bird seen or old friend recognized. A hundred and fifty species of birds these boys considered a good spring's work; in a single day they reported more than eighty. They had been taught a little about birds every year from the primary school up; every year their knowledge and enthusiasm grew. Children of the villages and country have much better opportunities, and with a little encouragement will be equally enthusiastic.

40. Bird Enemies. Difficulties in finding suitable places in which to build their nests, suitable material with which to construct them and abundant food supplies for themselves and their young, are numerous and severe for our birds. Nevertheless, the active, wide-awake creature would conquer all these, even in many parts of our large cities, were it not for more direct and positive enemies for which we ourselves are largely responsible.

First and foremost among the birds' enemies comes the cat, whose natural instinct makes her most destructive among her natural prey. We have introduced the cat amongst the wild birds and left her free to prowl and hunt during the nesting season, while the young birds are defenseless and the old ones are driven by necessity to hunt for food, even in danger to their lives. It has been estimated that in the course of a year every cat allowed to run outdoors may be charged with the death of fifty birds. Probably the only thing that we can do in the matter is to set the children to watch, and encourage them to report the deaths they see. Perhaps in this way we can persuade them to select a better pet than the house cat, or at least to keep her indoors during the time the birds are nesting. If children will put into the nests where known, and rear when nest is not known, the helpless nestlings found on the ground, many lives will be saved.

Next to the cat, the English sparrow probably ranks as the greatest bird enemy. Not only do the sparrows seem to have a personal enmity against the wild birds and will join in mobs to repel the smaller ones, but from their habit of early nesting they seize upon the most valuable places long before our summer visitors arrive. While something may be said in favor of the English sparrow, yet every investigation proves conclusively that its chief food is that of its tribe and that it will neglect its opportunities among insects at any time to feed upon seeds and grain. Some sane and expeditious way of exterminating the sparrows should be devised.[1] In many places systematic efforts are being made to kill them off. Sometimes they are attacked during the nesting season and nests, eggs and young are heartlessly destroyed. True sentiment seems to prevent us from recommending any such course to pupils, and in fact it may be well to limit ourselves to encouraging observation and study of the English sparrow, his habits and his relationship to our birds, and allow his destruction to be carried out by other hands.

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[1] The inquiring teacher will find considerable information in *The English Sparrow in North America*, Bulletin No. 1, United States Department of Agriculture.

There are few states in the union now in which there are not laws protecting the wild birds, and every teacher owes it to herself to know the laws of the state where she resides and to see that the pupils understand them thoroughly. These laws properly explained are usually quite sufficient to prevent the boys from making their predatory excursions or at least to keep them within bounds. However, the passion for hunting and collecting has not been so destructive to birds as have the dictates of fashion. More than one species of beautiful birds has been made practically extinct by man's greed and the feminine passion for adornment.

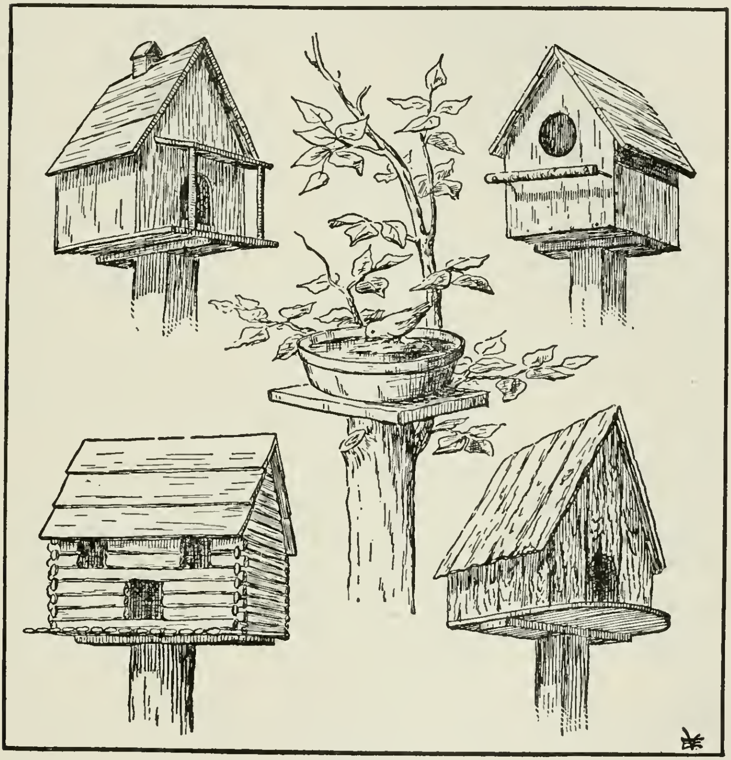
41. Attracting Birds. Most of the wild birds are naturally of a friendly disposition, and if not frightened do not seem to object to the presence of man or his work. There are many species of the most beautiful plumage that will readily come near our homes, even in large cities, if we can offer them coverts for concealment, attractive places to build, give them material to build with and assure them of food for themselves and their young. When they find these things many birds will build their nests even close to a railroad track or within sound of the roaring wheels of a factory.

Here are some of the things which we can do towards the partial domestication of our friends of the air:

(1) We can put up bird houses on the schoolgrounds and encourage the children to put up others at home. A few plans for these may be seen in the accompanying illustration.

(2) We may see that they have plenty of good, clean water from which to drink and in which to bathe. In the country this may not be so necessary as in the city; but

the nearer the water supply is to the house, the closer the birds will come. In the city, clean, shallow water is hard to find, and birds will go a long way to get it. A large pan or dull-colored bowl with a roughish surface, in which are placed a few stones or something on which the bird may alight will, if it is filled every morning with fresh water, be almost sure to attract more than one beautiful wild bird.



BIRD HOUSES

(3) We can hang out bits of thread or string, pieces of cotton and hair for the birds that use such building material, and if we want the robins to build near our city homes we can see that mud is offered them.

(4) In the winter time we can fasten in the trees around the schoolhouses pieces of suet and encourage the children to do the same at their homes. In this way they may be fortunate enough to secure daily visits from more birds than they thought were to be found in such cold weather.

42. Birds in Literature. All literature is rife with allusions to birds, and our studies will serve to make our interpretation of literature much more vivid. In addition to this there are a great many poems, anecdotes and essays of high literary merit that treat of some bird or some phase of bird life. The interested teacher will not have far to go to find abundant examples of these in the school readers or in the works of our standard poets. In many of the states there are published from time to time bird-day and arbor-day annuals which give many beautiful selections and suggestions at greater length than can be given here. An inquiry addressed to the state superintendent will usually bring a ready and helpful response.

When a teacher has once acquired the habit of associating or correlating her work in science and literature, she will find how helpful to both is such a plan. The pupil who reads *The Birds of Killingworth*, *To a Waterfowl*, or *Robert of Lincoln* goes to his bird studies with renewed sympathy and interest. After having seen the bobolink "swinging on brier and weed" and listened to his sweet song, the pupil will return to his reading lesson with increased enthusiasm.

43. Teachers' Aids. (a) Books. There are numerous finely illustrated descriptive books which relate to birds, but which belong rather in the domain of literature than in that of science. We make no attempt to mention these. The teacher will find the following books very helpful; if possible they should be placed in every school library and kept accessible for ready reference:

Bird Guide. Reed. (See Section 33.)

Color Key to North American Birds. Chapman and Reed. 300 pages. Doubleday, Page & Co. A rather large book, which includes all the birds of North America. They are grouped in Orders, then the birds of each Order are arranged according to their coloring. Each bird is shown in characteristic attitude and his prominent color patches are rightly indicated. The *Bird Guide* takes the place of this volume east of the Rocky Mountains.

Bird Life. Chapman. D. Appleton & Co. A convenient book of about 300 pages. Simple in style; beautifully illustrated and contains excellent descriptions and a valuable key for identifying our common birds.

Handbook of Birds of Eastern North America. Chapman. 418 pages. D. Appleton & Co. An illustrated book with a helpful introduction. Each bird is described in detail, and interesting facts are given concerning most of the species. This is an excellent book to use in connection with the *Bird Guide.*

How to Know One Hundred Wild Birds of Illinois; How to Know One Hundred Wild Birds of Indiana. These are two of several little books which retail at 50 cents each. They are published by the Educational Publishing Company, Chicago, and will be found somewhat helpful outside the bounds of the states they mention. They are types of many of the local bird guides and manuals which may usually be found at the important local bookstores.

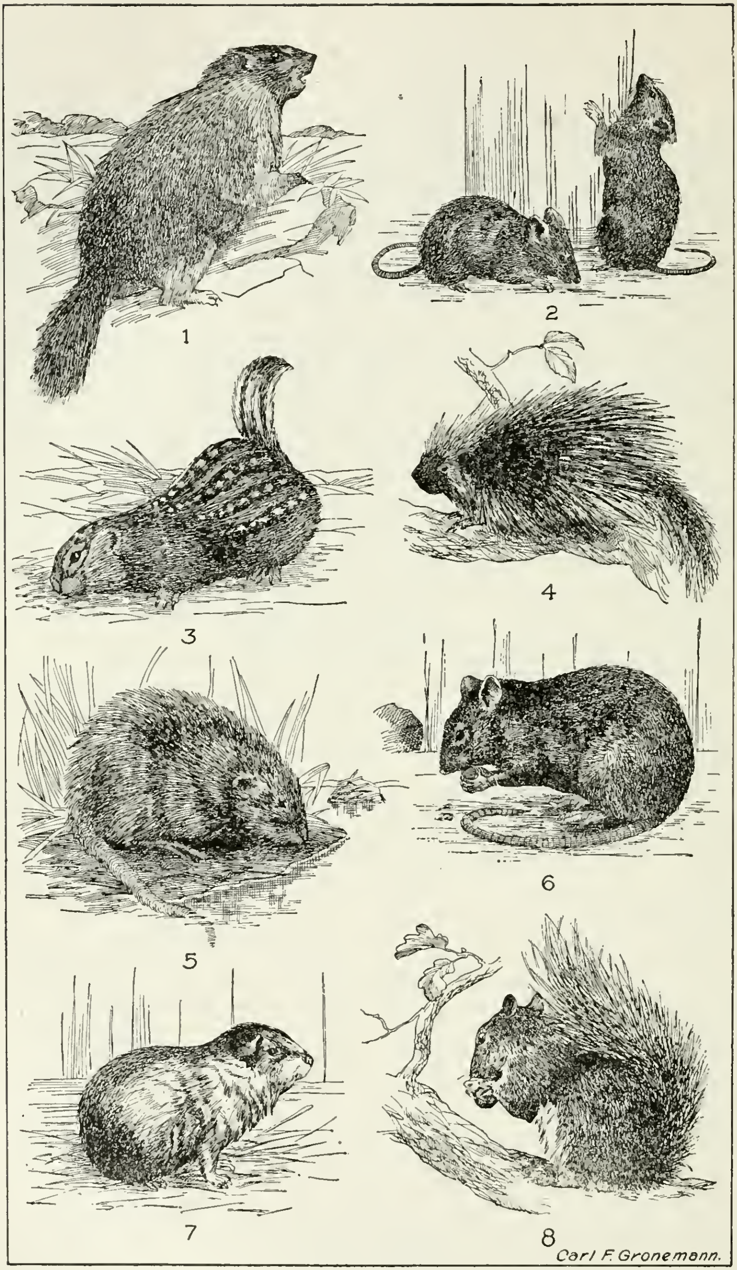
Bird Homes. Dugmore. Doubleday, Page & Co.

THE STUDY OF ANIMALS

44. Suggestive Lessons. In the discussion *Interesting Nature Lessons*, there are a number of lessons on the habits of animals which serve a twofold purpose. They supply the teacher with interesting material for such studies and at the same time suggest a plan that may be followed in the study of other animals.

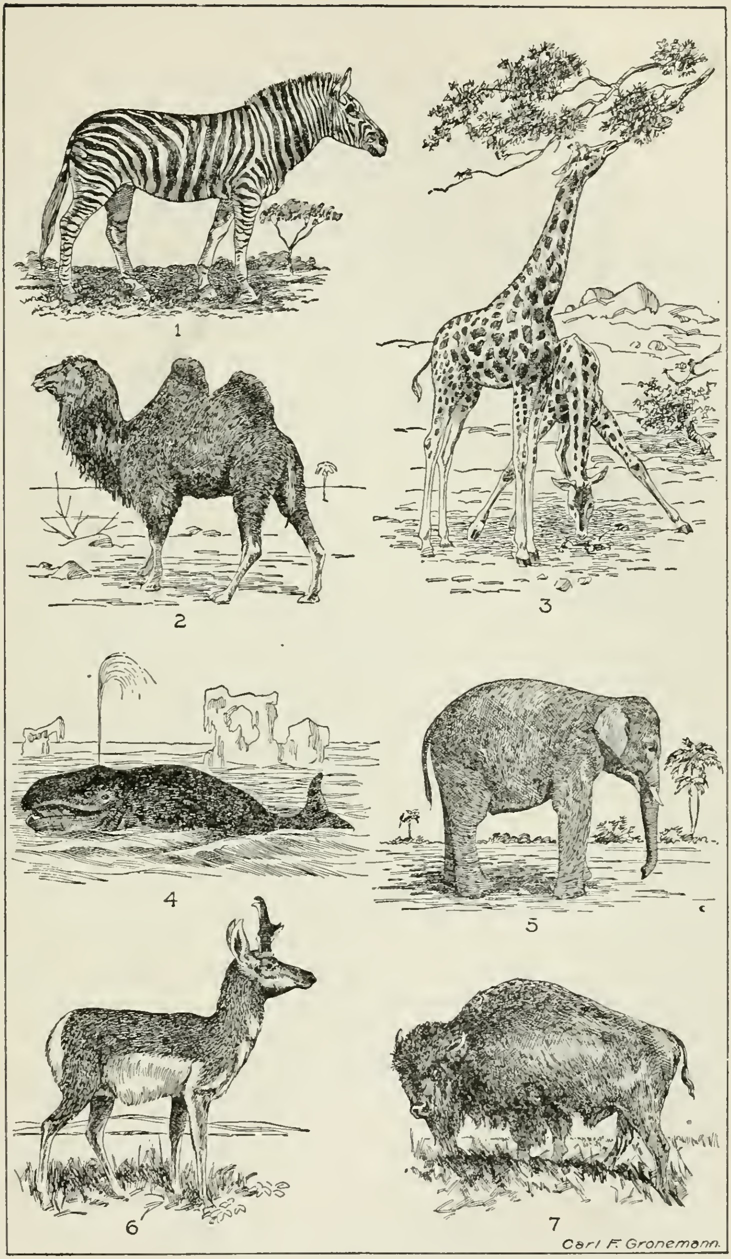
Some of those on the first page will be known to your pupils. Get them interested in studying the mouse, the gopher, the guinea pig, the squirrel and other animals common to the locality. Ask them to observe the animal, take notes of what they learn, and once a week devote a period to these reports. If a specimen of the animal under consideration can be kept in a cage in the schoolroom for a few days, its presence will increase interest in the study.

On the opposite page are pictures of animals whose habits must be learned from works on natural history. It is a good plan to have each of these described when the geography class is studying the region in which it lives.



COMMON RODENTS

1. Marmot.
2. Mice.
3. Gopher.
4. Porcupine.
5. Muskrat.
6. Rat.
7. Guinea Pig.
8. Squirrel.



INTERESTING ANIMALS

1. Zebra.
2. Camel.
3. Giraffe.
4. Whale.
5. Elephant.
6. Am. Antelope.
7. Buffalo.

TEST QUESTIONS

1. Why is a knowledge of the principles of the various branches of physical science more necessary now than it was fifteen years ago? Give an original illustration proving your statement.

2. Show by concrete illustration how the study of plants helps a pupil to become self reliant.

3. State the advantages of making a thorough study of some important plant according to the plan given for the study of corn. What animals in your locality can be studied in a similar manner?

4. What are the advantages of having pupils keep systematic records of their observations in all science work? Make a plan for a record for observations on wheat or cotton.

5. Of what value is drawing in connection with the study of such subjects as corn and birds?

6. What facts of the plan for the study of corn can you use with the geography class? In what other ways can you illustrate the relation of elementary science to geography?

7. Describe the habits of the English sparrow under the following heads: (a) attitude when at rest; (b) mode of flight; (c) manner of moving on the ground; (d) place of feeding; (e) relation to other birds.

8. Write a brief essay, not to exceed 300 words, on the subject of *Bird Migration*.

9. In what ways may the study of birds be made to influence the character of boys and girls?

10. State prominent traits that enable you to distinguish sparrows from swallows; nuthatches from other creepers; wrens from kinglets.

CHAPTER NINE

ELEMENTARY SCIENCE (CONTINUED)

STUDY OF INSECTS

INTRODUCTORY

1. Reasons for the Study of Insects. Insects constitute by far the largest number of living creatures. A conservative estimate places the number of species at five million, but some authorities claim there are many more. On every hand, in all climes, insects abound. There is scarcely a plant or part of a plant that is not subject to attack from them, and some of them constitute the most troublesome pests with which the farmer has to contend. Some are injurious to man; many species are among the most beautiful and wonderful of living things. These facts and the ease with which they can be procured point to the study of insects as one of the most interesting and useful lines of work in elementary science.

2. Material Required. The study of insects is facilitated if each pupil has the following outfit:

(a) AN INSECT NET. Procure four or five feet of No. 12 wire from a hardware store. Bend it around a flower pot or some other cylindrical object so as to form a loop about a foot in diameter, crossing the wire six or eight inches from the end and giving it two firm twists. Clamp this loop into a vise and twist the ends closely together. Take a broom handle or any other stick of similar size and fasten the twisted end of the wire into this handle. Procure about a yard of tarleton or cheesecloth, and make a conical bag having a mouth the size of the loop. The bag should be at least two and one-half times as deep as the frame is wide, so that it will lap over easily when the insect is caught. With a little care and skill one soon becomes expert in capturing insects with this little apparatus, and it furnishes the children with a great deal of sport and outdoor exercise.

(b) An Insect Cage. This is easily made by taking a cigar box or crayon box and cutting out the whole or a portion of one side and covering this part with wire screen. Cut a piece of glass and slide it in in place of the lid, so you can watch the insects. A pasteboard box will answer the purpose, but it is not so durable. Insects can be kept in one of these cages and studied until all of the changes which they undergo can be observed.

(c) A Collecting Bottle. This is most easily prepared by procuring a wide-mouthed bottle and placing in it a small quantity of absorbent cotton, enough to cover the bottom to the thickness of an inch. Procure a vial of gasolene and pour a small quantity on the cotton. Keep the bottle corked. The vapor of gasolene is poisonous to insects, and they die almost instantly when placed in the bottle.

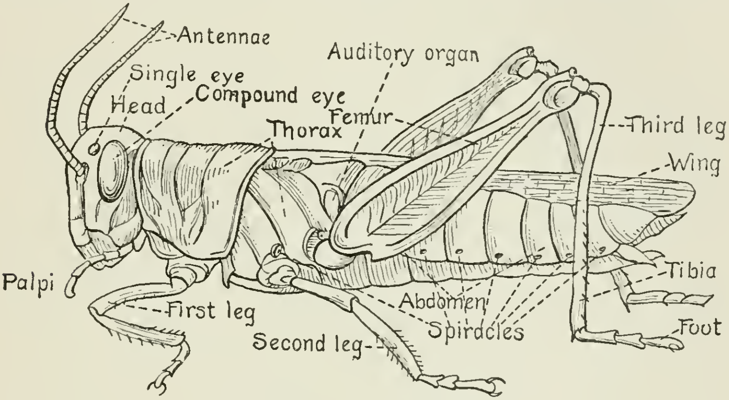
Caution. The vapor of gasolene is highly explosive, and both the collecting bottle and the vial of gasolene should be kept from artificial light and heat.

PARTS OF AN INSECT

3. General Structure. Insects are characterized by having their bodies divided into three segments—head, thorax and abdomen—each of which is distinctly separated from the others; by having three pairs of legs, all borne upon the thorax; and, in normal condition, two pairs of wings; however, one pair or both may be wanting. The blood is colorless or a greenish white, and the young are produced from eggs. A knowledge of their general structure is essential to the study of insects; therefore, the first work with intermediate classes should be the study of the parts of some insect easily obtained and of such size that the parts can be seen without the aid of a magnifying glass, though the use of the glass often adds much to the interest of the work. Dead specimens should be studied first, then living specimens of the same insect, for the purpose of seeing the working of the different organs.

4. The Diagram. The diagram here given is for the purpose of enabling the teacher to become familiar with the structure and parts of an insect. The grasshopper is chosen because it is common and large. Before proceeding to the lesson described below, you should study the grasshopper in connection with the diagram until you can readily locate and recognize all the parts named.

5. Preparation. Previous to beginning the lessons, have the pupils collect and place in their insect cages several full-grown grasshoppers. The largest species obtainable are the best for study. The insects must be fed daily with grass, and this should be sprinkled with water once or twice each day. Before the lesson have each pupil take a grasshopper from his cage and put it in the gasolene bottle. After the insects are killed and have been aired a few moments, distribute them to the pupils.



PARTS OF A GRASSHOPPER

6. The Insect as a Whole. Find the parts—head, thorax and abdomen. How are these separated from each other? How are they joined? How do the divisions of the body of the grasshopper compare with the divisions between like parts in the body of the cow, the dog, and the horse? These comparisons will bring out the fact that the divisions are much more distinctly marked in the grasshopper. Ask the pupils to examine other insects and ascertain whether or not this characteristic is true of them. Have them look up the word *insect* in the dictionary and see why the name is appropriate.

Look at the appendages. How many pairs of legs are there? To what is each pair attached? How many pairs of wings? To what are these attached? Have the pupils lay the grasshopper on its back and with a dissecting needle bring the wings out until they are nearly at right angles with the body. This work is the most successful if each pupil is provided with a piece of cardboard and several pins, so that the wings can be pinned in position.

7. The Head. What is its general shape? Have the pupils hold the grasshopper in front of them so they may look directly at its face; then turn the insect so as to obtain a side view of the head. What projections do you find on the head? What are those on the upper part usually called? The common name *feelers* will probably be given in answer to this question. For this you may add the term *antennae.* Notice the projections on the lower part of the head. These are sometimes called the mouth feelers; the more technical name is *palpi.* Where are the eyes? How many are there? Do you consider them large in proportion to the size of the insect? Notice the two kinds of eyes, the large, compound eyes on the sides of the head, and the single eyes, *ocelli,* between the compound eyes. Children can find these without a glass, if their attention is directed to them.

Examine the mouth. Lift the upper lip with the needle and notice how it is joined to the head. Cut or break it off. This brings to view the jaws, or mandibles. By moving these with the needle, pupils can see how they work. Dissect the mandible with the needle very carefully and find the tongue, a brown organ, between them. Take off the lower lip. This gives a still more complete view of the mouth organs within.

After this study of the head has been completed, it is a good plan to have the pupils cut the head from another specimen, lay it upon a piece of white paper, face upward, and make a sketch of the face.

8. The Thorax. Notice the shield, or cape-like collar, forming the first segment and extending over the other. Remove this carefully and count the other segments. What organs are attached to them?

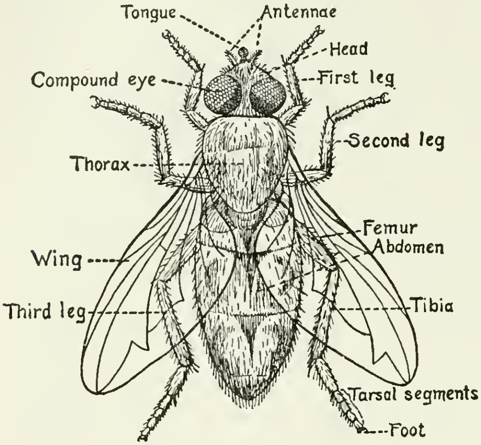
9. The Abdomen. Count the number of rings in the abdomen. Do all find the same number? Why can the grasshopper bend the abdomen? Notice the grooves on the under part.

Just above the grooves notice the row of small openings. These are breathing pores, called *spiracles*. How many are there? Are any similar openings found in the thorax? Can you see how these work in the living grasshopper? Could you drown a grasshopper by placing only his head under water? Why? The discovery of these spiracles will raise several questions in the minds of the children. With a younger class it is not advisable to go into details in explanation, but with the older classes the explanation of the intricate air tubes can be undertaken.

10. The Legs. Compare the three pairs of legs as to size. Which is the shortest? Which the longest? How many parts can you discover in the leg? Do you know the names of the parts of the leg in the human body? The same names are applied to the parts of the insect's leg. Can you tell to which part each name should be applied? Why are the legs of the third pair so much larger and stronger than the others? Is this true of all insects? Several days will probably be required to obtain an answer to this question. In how many ways does the grasshopper travel? How does the grasshopper make a noise?

11. The Wings. In what position are the wings when at rest? Which pair folds over the other? Which pair is the larger? Of what is the framework of the wings composed? What is the position of the wings when in motion? For what are they used? Have the pupils make a drawing of the different legs and of the wings, also a drawing of the complete specimen, before the lessons end.

12. Comparative Study. Have the class examine in a similar manner the housefly, a butterfly, a moth and a May beetle (commonly known as the June bug), and see how many parts they can find and identify. Each pupil should make a list of the parts found as he examines the insect. From these observations a few comparisons can be drawn. Do all the insects which you have examined have the same number of wings? How do the wings of the beetle differ from those of the grasshopper? Do all these insects move about in the same way?



PARTS OF A FLY

Why is the June bug, or May beetle, so called? Why are these beetles found only during a brief period each season? Do you know of any other insects of which this is true? Why do we have grasshoppers, flies, mosquitoes and some other insects all through the season?

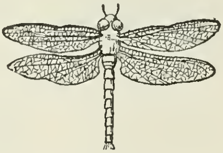
These questions should be given one at a time. After one has been answered to the satisfaction of both teacher and class, another can be given. Each question calls for careful and systematic observation, and it is not probable that the class will be able to answer them all in one season. If properly guided, the pupils will solve for themselves all problems to which these inquiries give rise.

LIFE HISTORY AND CLASSIFICATION

13. Metamorphosis. Through the observations necessary to answering the above questions, the children will discover that some insects, like the butterfly, go through four changes, the egg, the larva, the pupa or chrysalis, and the perfect insect or adult, being the forms in which they appear during their existence; that others, like the chinchbug, undergo only partial changes, and that still others, like the grasshopper, appear from the egg in recognizable form. These changes are known as *metamorphosis*. An insect going through the four changes is said to have a complete metamorphosis. One having only a part of the changes has a partial metamorphosis.

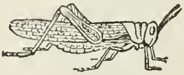
14. Classification. Upon these distinctions and upon the number and structure of the wings, insects are divided into Orders and Sub-Orders. While a perfect classification has not yet been made, the following great Orders include all the insects usually met in the temperate regions. Classes in the grammar grades can learn the characteristics of each Order from observation, and after they have done this they should be able to tell the Order to which most of the insects common to their locality belong:

Dragon Flies, or *Nerve-winged Order* (Neuroptera). The insects of this Order have four membranous wings furnished with veins and numerous cross veins, giving them a net-like appearance. The larvae live in water and the metamorphosis is incomplete. All species feed upon other insects. The dragon fly and the ant lion are good examples.



DRAGON FLY

Grasshoppers, or *Straight-winged Order* (Orthoptera). This Order includes grasshoppers, locusts, crickets and cockroaches; the wings of the second pair are flattened lengthwise and laid straight when folded. The metamorphosis is lacking, or incomplete.



LOCUST

Bugs, or *Half-winged Order*. Many of the bugs have half of each wing in the first pair thickened like the wing covers of beetles, hence the name. The mouth parts are fitted for sucking. The metamorphosis is incomplete. The species are very numerous, and some, like the squashbug, the bedbug and the chinchbug, are well-known pests. The cicada is also a good illustration of this family.

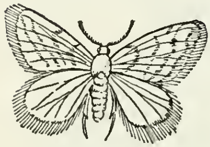
CICADA

MAY BEETLE

Beetles, or *Sheath-winged Order* (Coleoptera). The beetles have an outer pair of hard wings called wing covers. The metamorphosis is complete and the larvae of some species are destructive. The May beetle, or June bug, is a good example.

HOUSEFLY

Flies, or *Two-winged Order* (Diptera). The members of this order have only one pair of wings and these are membranous. The mouth is fitted for sucking or puncturing, and the metamorphosis is complete. The housefly, mosquito and gnat are good examples.



MOTH

Butterflies, or *Scale-winged Order* (Lepidoptera). This order includes the butterflies and moths. Many of the species have large, showy wings, whose brilliant coloring is due to the feather-like scales with which they are covered. The metamorphosis is complete. The mature insect has a long proboscis, which, in the butterfly, is coiled when not in use. The larvae of some species are very destructive to vegetation.

HONEY-BEE

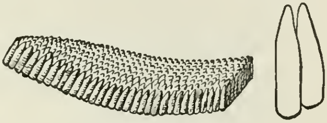
Bees and Ants, or *Membrane-winged Order* (Hymenoptera). This is one of the largest Orders and is estimated to include about one-fourth of the known species of insects. Bees and ants have four membranous wings, the first pair being the larger. Imperfectly developed females of some species have no wings. The metamorphosis is complete. Some species feed upon honey and others upon insects. This order includes the most intelligent and the most beneficial insects. Some of them, like the honey-bee, the wasp and the ant, live in colonies which have every appearance of well-organized communities.

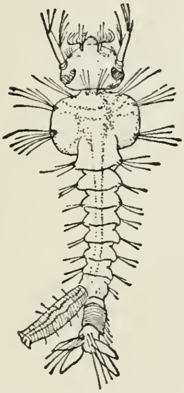
THE MOSQUITO

15. Life History. The life history or life story of an insect includes all the changes it undergoes from the egg to the adult (Section 13). The study of one insect as a type gives the class an idea of the life history of all insects belonging to that Order. The mosquito is a good type because all phases of its life history can easily be seen and because the insects can be obtained without difficulty.

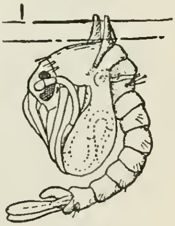
16. Preparation. Dip a little water from the surface of the rain barrel or pool, running the dipper through the water much as you would a skimmer; pour the water into a glass fruit- or candy-jar; then dip some from the barrel so as to secure a number of wrigglers. Place covers of wire gauze or cheesecloth on the jars to prevent the escape of the mosquitoes.

17. Eggs. After a time examine the water carefully. You will doubtless find clusters of eggs floating on the surface. These come from the first water placed in the jar. These clusters are usually about a quarter of an inch in diameter and contain from two hundred to four hundred eggs, standing upon end and arranged in a single layer. The egg is shaped like a kernel of oats. With a good magnifying glass you will be able to see the structure of the cluster and the form of the single eggs. How long a time is required for the eggs to hatch?


A CLUSTER OF EGGS


LARVA

18. The Larvae. Study the wrigglers. What is their shape? Place a few in a shallow white dish with just enough water for them to swim in, so that the pupils can get a good view of them. If you have several dishes for this purpose, it will facilitate the work. How long are the wrigglers? Why do they apparently hang head downward from the surface of the water? How long do they live as wrigglers? What do they eat?

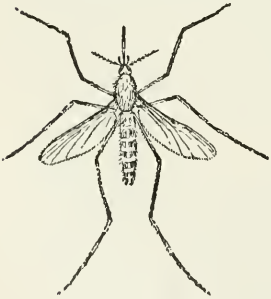

PUPA

19. The Pupae. What objects besides wrigglers and eggs do you find in the water? Do these objects bear any resemblance to the wrigglers? What change do they undergo? How long a time is required for this change to occur? Notice that the wriggler rests in the water with the head downward, with the other end of the body at the surface, while the pupa has the head upward, for the same reason—that it may breathe the taken-in air through the posterior extremity, and the pupa through the head.

20. The Perfect Insect. Notice when the mosquitoes first appear on the cover of the jar. Study the mosquito as a whole. How many wings does it have? How many legs? Are all the legs of the same length? Can you see the eyes? How many are there? The compound eyes are easily seen, and with a good glass a simple eye can be discovered. How does the mosquito bite? What does it feed upon? Examine the mouth organs with the magnifying glass. What is the shape of the proboscis?

How many kinds of mosquitoes appear? Are all equally annoying? The males are distinguished by carrying large, bushy feelers, those of the female being much more delicate. The distinction is easily made by the naked eye. The males are harmless, and it is only the females whose bite is annoying. Can the mosquito walk upon the water? Why do mosquitoes multiply so rapidly? Why do we have mosquitoes all summer? Why are they more numerous in some localities than in others? Have the pupils examine the region around the schoolhouse and the regions around their homes, in a search for breeding places.

21. Destruction of Mosquitoes. The lessons on the mosquito should be turned to practical account as fast as possible. Remove the wrigglers from the glass globe or the largest jar, and place them in another jar. Empty the first jar and place some pebbles and clean sand in the bottom; then add two or three plants taken from a pond or stagnant pool. Fill this jar with water to within two inches of the top. Place a goldfish in the jar containing the sand and pebbles. Collect a quantity of wrigglers from the other jar and pour them into the jar containing the fish. What

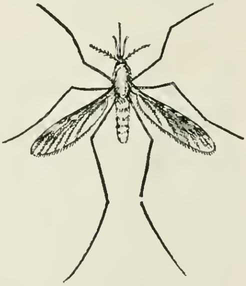

ADULT MOSQUITO

occurs? Perch and a few species of minnows will also eat the wrigglers, but only a very small number are destroyed in this way, so other measures must be adopted for their extermination.

Sprinkle a few drops of kerosene on the water in the other jar? What effect does it produce upon the wrigglers? If any mosquitoes are on the cover, dislodge them. What happens when they touch the water?

One ounce of kerosene to every fifteen square feet of surface is sufficient to exterminate all mosquitoes and wrigglers in any body of water. Lead the pupils to see how, by united effort, nearly every community can rid itself of these pests. Whenever possible, stagnant pools should be drained.

22. Mosquitoes and Disease. The species of mosquito most common in temperate regions is considered harmless. Another species, however, found in nearly all parts of the country, causes malaria by its bite. The malaria-bearing mosquitoes can easily be distinguished from the common species by noticing the following points: The wings of the common mosquito are clear, while those of the harmful species are spotted. The palpi of the common species are short, while those of the malarial mosquito are nearly as long as the proboscis. Any child old enough to study the mosquito can recognize these differences. In connection with this topic, ask the class to learn what they can about mosquitoes carrying yellow fever in Cuba and other tropical countries.



MALARIAL MOSQUITO

23. Applications. The life study of the mosquito prepares the class for a like study of other insects. The housefly should receive its share of attention. No attempt to breed flies should be made, but the children should be led to understand thoroughly that wherever filth is allowed to accumulate, breeding-places for flies are found, and that the best way to prevent their multiplying in large numbers is to keep everything about the premises clean. The danger to health from flies is seldom realized. They sometimes convey typhoid fever, and they contaminate with filth everything which they touch. Impress upon the pupils the importance of keeping the home free from flies.

The honeybee, the wasp and numerous species of butterflies and moths afford interesting and profitable studies which can be pursued in accordance with the plans given above, making only such modifications as the life history of the insect requires. The relation of insects to agriculture is considered in the lesson on that subject, later in this volume.

24. Aids. The following works are helpful in preparing lessons on insects:

Nature Study and Life. Hodge. Pages 4 and 5. (Section 44.)

Farmers' Bulletin No. 155, United States Department of Agriculture: *How Insects Affect Health in Rural Districts.*

The Study of Nature. Schmucker. J. B. Lippincott Co.

STUDIES IN COMMON THINGS

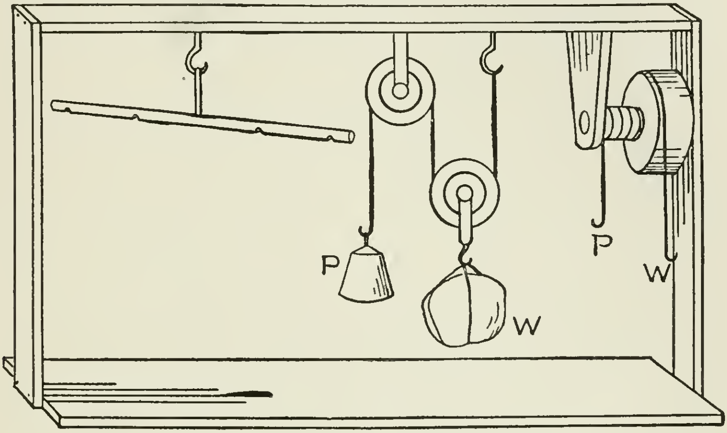
INTRODUCTION

25. Explanatory. The exercises in physics are designed for pupils in the grammar grades, and those on the mechanical powers should not be attempted with classes that have not done at least a half-year's work in the seventh grade. The exercises include those subjects in physics which the pupils most need, and they are chosen with a view to their practical application to everyday affairs. The teacher should have at hand a good modern text-book in physics, and unless she is thoroughly familiar with the subject she should work out very carefully each exercise before presenting it to the class.

MECHANICAL POWERS

26. Machines. The older boys are always interested in machines. However, but few of them will understand what a machine is, or that the most complex machines are composed of a few simple elements ingeniously joined together. These elements, to which the term *mechanical powers* is generally applied, are the lever, the wheel and axle, the pulley, the inclined plane, the wedge, and the screw.

Arouse an interest in these mechanical powers by such questions as these: Does a machine create power? Why can a man do more work with a machine than with his hands? Does a machine do its work better than a skilled workman?



For convenience in illustrating the principles of mechanical powers, you need a frame like the one in the illustration. This is made by taking an inch board nine or ten inches wide and two feet long, nailing to each end upright pieces five inches wide and sixteen or eighteen inches long and then joining the tops with a piece of the same width.

The frame should be strongly nailed, since it will be subject to considerable handling and more or less strain. The illustration shows the lever, pulley, wheel and axle in place. The class should also be provided with screw-eyes of medium size, a number of wire hooks which can be screwed into a support, some six-penny wire nails, a few screws and some pieces of stovepipe wire.

27. The Lever. Have each pupil procure a piece of lath at least eighteen inches long. The lath should be planed on all sides. With a pencil draw a line through the middle, from end to end. With a rule mark the lath off into sections six inches in length, then subdivide each of these sections so that the marks will be three inches apart. With a brad or a nail make holes through the lath on the middle line where each of the section lines crosses it. Place a nail through the hole in the center. Put screw eyes into the top of the frame, near enough to each other so that the lath can be supported by resting the nail upon them. If the lath does not balance, have the heavy end whittled carefully until the lath will remain in a horizontal position when on the support.

Have each pupil prepare two scale pans, using covers from tin boxes. The covers for each pair should be of equal size and as near the same weight as possible. Punch three holes in the rim of the covers so as to divide the circumference into three equal parts. Insert fine wire or linen twine in these holes; bring the three strands to a point and fasten them together. A hook made of stovepipe wire should be attached to the strings where they are tied together. Place nails in each of the holes in the lath. Hang the scale pans successively upon the nails, beginning with those at the end of the lath and working toward the center. See that the lath balances with the scale pans in each position. You now have a balance which can be used to illustrate the power and the principles of the lever. By using dry sand for a weight, a great many delicate tests can be made with this simple apparatus. Teach the parts of the lever—fulcrum and arms. Teach the names of the forces which operate upon the lever. The weight which is used to move the load is called the *power*. In the illustration, P means power; W, weight.

With the scale pans equally distant from the fulcrum, how much weight in one is required to balance the weight in the other? Hang one scale pan on the end of one arm and the other half-way between the fulcrum and the end of the other arm, and balance with sand. Place a given weight in the first scale pan. What weight is required in the second to balance it?[1] Perform experiments by placing the power and weight at different distances between the fulcrum and the end of each lever arm and determine the exact weight required in each scale pan to balance the weight in the other. Notice the difference in distance through which the power and load move when the arms of the lever are raised or lowered. How do these distances compare with the weights in the two scale pans? Which weight moves over the greater distance? Measure the distance carefully and multiply each weight by the distance through which it moves. Compare the products. What do you discover? Have this exercise repeated a sufficient number of times to enable the pupils to understand thoroughly the principle of the lever. When this is understood, indicate it by the formula placed in the form of an equation:

Power multiplied by the power arm equals weight multiplied by the weight arm; or, *power multiplied by the space through which it moves equals the load multiplied by the space through which it moves.*

The next step consists in using and testing the different classes of levers. In how many ways do men use a crowbar? Illustrate by the lath or by a pencil or ruler. What is gained in using the crowbar in these ways? What is lost?

Place the power between the fulcrum and the weight. What is gained by this arrangement? What is lost?

Have the pupils discover and report the different classes of levers and their uses in tools and machines with which they are familiar; also have them discover the principle upon which the weighing scale is constructed. Why can you balance a load of coal or a load of hay with the weight of your hand on a platform scale?

Give problems such as these:

1. A man and a boy are carrying a weight of 100 pounds

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[1] Weights for use in these exercises can be prepared by obtaining sheet lead from tea chests and weighing it out in half-ounce, ounce, two-ounce and four-ounce packages and rolling the lead together, or by taking bottles of different size and filling them with sand until the desired weight is obtained. This will probably have to be done at a store, for schools are not usually provided with weighing scales.

on a pole 12 feet long. Where must the weight be suspended that the boy may carry only one-third of the load?

2. A crowbar is 4½ feet long. The fulcrum is placed 6 inches from one end. What power will be required to lift a load of 1000 pounds? If the man's hand moves down one foot, how far will the load be raised?

3. Two boys have a plank 12 feet long, which they wish to use as a seesaw. One boy weighs 100 pounds and the other 75. At what point in the plank must the support rest in order that the boys may balance each other?

28. Wheel and Axle. Thrust a nail through the hole in the center of the lath and, using this for a pivot, with a piece of crayon resting against one end of the lath describe a circle on the blackboard. Without moving the lath from its position, describe another circle, holding the crayon six inches from the center. The large circle represents the circumference of a wheel and the small one the circumference of an axle. How do the distances from the center to each of the circumferences compare with the arms of the lever? If a load of 100 pounds is attached to the axle, what power will be required to balance it on the wheel? How can you solve this problem? What is the difference between the wheel and axle and the lever?

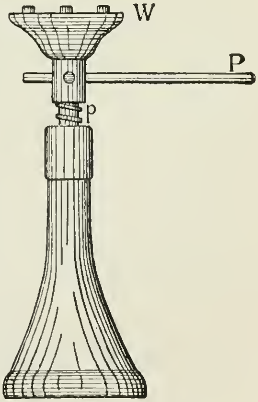
If any of the pupils have access to a turning lathe, it is well to have this piece of apparatus constructed. By making the wheel six inches in diameter and the axle two inches, you will have a machine with proportions which can be used without involving fractions. Mount the wheel and axle on the frame as illustrated in Section 26. When the power is attached to the wheel, what is gained? What is lost? When the power is attached to the axle what is gained? What is lost? What machines have you seen with the power attached to the axle? What is the reason for this arrangement? What machines have you seen with the power attached to the wheel? For what are these machines used?

29. Inclined Plane. Take a plank or joist, place one end on a wagon-box and let the other end rest on the ground.

Why is it easier to load a barrel of flour by rolling it up the plank than by lifting it into the wagon? If the plank is 12 feet long, the wagon 3 feet high, and the barrel weighs 200 pounds, what power will be necessary to roll the barrel into the wagon? An arrangement like this is called an inclined plane. See how many illustrations and uses of the inclined plane you can discover. Why do roads wind around hills? Why do railways in mountainous regions contain so many curves? The wedge is a form of inclined plane. For what is it used? How is the power usually applied?

30. The Screw. Cut from a sheet of white paper a right-angled triangle having a base eight or ten inches long and an altitude of two inches. Draw a heavy pencil line along the longest side of the triangle. Wind the triangle around a pencil, beginning with the wide end and keeping the lower edge of the paper even with the end of the pencil. What part of a screw does the black line represent? What, then, is a screw, mechanically considered? (A screw is an inclined plane wound around a cylinder; or, a rolled inclined plane.) If you can, secure the loan of a small jackscrew. If this cannot be obtained, a small vise will answer the purpose. With the screw in hand, teach the class the different parts—the thread; the body, which is the cylinder of the screw, and the pitch, or interval, which is the distance between the threads.

Consider the cap of the jackscrew or the movable jaw of the vise as a load. How far does the load move at one revolution of the screw handle? The power is applied at the end of the lever. How far does the power move in one revolution of the screw? (The last question, of course, is based upon the supposition that the pupils are able to find the circumference of a circle when its diameter or radius is given.)



THE JACKSCREW

W, weight, or load; P, power; p, pitch.

Can you see why with so small a power you can lift so large a load with a screw? Ask the pupils to observe the different uses to which the screw is put. After they have familiarized themselves with these uses, give occasional problems, such as the following:

1. If a screw has a pitch of $\frac{1}{8}$ inch and the power is applied to a handle 3 feet long, what load will a power of ten pounds lift? Through what distance will the power move in making one turn of the screw? How far will the load be raised?

2. A screw having a pitch of $\frac{1}{3}$ inch is worked by a lever that describes a circumference of 8 feet. How great a pressure will a power of 15 pounds produce? How far does the power move the load?

3. A jackscrew has a pitch of $\frac{1}{4}$ inch and a handle 15 inches long. What power will be required to lift a load of 100,000 pounds?

Which will lift the greater load with a given power, a screw with a large or small pitch? Why? Why is the screw particularly suited to the purposes to which it is applied?

31. Other Mechanical Powers. The foregoing exercises are typical of many that can be given on the mechanical powers. With these plans give lessons on the inclined plane, the wedge and the pulley. Before the exercises end, the pupils should be made familiar with all of the mechanical powers. In connection with each power given, use practical problems similar to those given above and lead the pupils to connect their arithmetic work with these and other lessons in physics. Problems relating to the exercises in physics can often form a part of the arithmetic lesson when the class is engaged upon that part of the subject to which such problems naturally relate.

GASES AND LIQUIDS

32. Elasticity of Air. If you can procure a quill, make a common popgun, or procure a toy airgun. Why is the cork or the pellet expelled with such force? Have you ever seen airguns used for shooting game or shooting at targets? Why are they effective?

Take a bicycle pump, hold the finger tightly over the end of the delivery tube and press down upon the piston handle. Why does the piston rise when the hand is removed?

These experiments and queries will call attention to the elasticity and expansibility of air; the pupils should look for other illustrations.

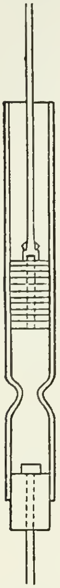
Why does the barrel of the bicycle pump become warm while pumping up a tire? (Compression of air raises the temperature.) Can you find other illustrations of this principle? If air is expanded, how will its temperature be affected? Feel the air as it is let out of an inflated bicycle tire. What do you notice with respect to its temperature?

33. Pressure of Air. Fill a tumbler with water, place a card over the top, quickly invert the tumbler and remove the hand from the card. What keeps the water in the tumbler? Try the experiment with the tumbler only half full of water. What is the result? What would be the effect if a barrel full of water with a tight cover were inverted in a similar manner? Why?

Take a small tumbler or a small bottle having a large mouth, place in it a little cotton so pulled apart that the fiber will burn easily. Ignite the cotton and place the palm of the hand quickly over the mouth of the bottle. Why does the bottle adhere to the hand? How do you account for the drawing sensation produced by the bottle? Try the same experiment, inverting the bottle over a saucer of water. How much water is drawn up into the bottle? Why?

These experiments show that the air exerts pressure in all directions. The pupils should now learn that this pressure at sea level is equal to about fifteen pounds per square inch, and that it diminishes as the altitude increases. If they can ascertain these facts for themselves, have them do so; if not, state the facts to the class.

34. Pumps. A very effective lifting pump can be made after the following plan: Procure a lamp chimney, such as is used on a student lamp, a spool that is of the right size to slide easily up and down in the tall part of the chimney, and a large cork that will fit tightly into the bottom part of the chimney. Soak the spool in water over night, then screw into one end of it two small screw eyes with long screws. Take a piece of pine about a half-inch square and fifteen to eighteen inches long; fashion it so that one end of it will just fit between the screw eyes. Place this in position and fasten it with two small screws, one through each screw eye. Just underneath this stick, and over the hole in the spool, tack a piece of thin leather or thin rubber about the shape and size of a dime. Use only one tack and drive this as near the edge of the leather as possible. Wind the spool with cotton twine or some other thread, so it will form an airtight piston to the chimney. Cut a hole through the center of the cork, and over this place a piece of leather like that placed over the hole in the spool. If you can procure a glass drinking-tube from a drug store and insert this in the cork, it adds interest. The cork should be made airtight. If necessary, cover it with wax or paraffin. Insert the tube in a vessel of water and work the piston. Watch the action of the valves. You will notice that they are very sensitive, and that as soon as the barrel of the pump is filled with water they yield to the slightest motion of the piston. Ask the pupils to compare this pump with those at home and see whether or not the two are constructed on the same principle. Will the lifting pump raise water to any desired height? Why?


LIFTING PUMP

A cubic foot of water weighs 62.4 pounds. What is the height of a column of water one inch square that will weigh 15 pounds? The solution of this problem will give the height to which water can be raised at sea level; but the pupils should be shown that this result is theoretical, and that because of imperfections in the pump, especially leaky valves, the actual height is a little less than this.

Mercury is 13.6 times heavier than water. How high a column of mercury will the pressure of the air sustain at sea level? The solution of this problem naturally leads to the discussion of the barometer. If one can be obtained it is well to explain its facts and principles at this time, and have the pupils study it for a few days to notice the variation in the height of the column of mercury.

How can we raise water to any desired height with a pump? How does the fire engine throw such a powerful stream of water? From the study of the lifting pump, lead the pupils to construct a force pump, making only such changes in the apparatus as are necessary. An air chamber can be added to the force pump by taking a bottle with a large mouth and fitting it with a cork, through which two openings are made, one for the tube leading from the force pump and the other for the delivery tube leading to the vessel into which the water is discharged. Of what advantage is the air chamber? For what are force pumps used? To which class does the bicycle pump belong? Can compressed air be used for operating machinery? Why?

Call the attention of the pupils to the fact that air is typical of all gases, that all possess elasticity, that they can be compressed and that when external pressure is removed any gas will expand to fill the space within which it is confined. By cold and pressure many gases are changed to liquids. Can air be so changed?

35. Pressure of Liquids. The pupils have learned the weight of water. Procure a cylindrical pail or can and fill it with water. What does the pressure on the bottom equal? (The weight of the water.) How can we compute the pressure on the side? To answer this question the pupils must know how to find the convex surface of a cylinder; therefore, if a rectangular vessel can be obtained it simplifies the problem. Let the pupils discover the principle upon which this problem is solved, by such questions as these: What does the pressure on the side where it unites with the bottom equal? What is the pressure at the surface? How can we find the average pressure for the side?

When the principles for finding pressure are understood, interesting problems involving their use can be added to the mensuration work in arithmetic; also lead the pupils to see the practical application of these principles by asking such questions as, Why are dams made so strong at the bottom? Why can water be used to operate machinery? Upon what does the power exerted by the water depend?

36. Buoyant Force of Liquids and Gases. Take one of the laths used in illustrating the lever, run a nail through the hole in the center and place it in the hooks on the frame. Attach scale pans to each end so as to form a balance. Suspend a small stone from one scale pan by a string at least four inches long. Place in this scale pan a small vessel that will hold a quantity of water, at least equal to the volume of the stone. Place weights in the other scale pan to balance; fill a vessel full of water and set this in a larger vessel; then move the apparatus so as to immerse the stone in the water. What happens to the opposite end of the scale beam? Leaving the stone immersed in the water, remove the larger vessel and pour the water which ran over into it in the small vessel in the scale pan. What effect does this have on the balance? How much do you think the stone loses in weight when immersed in water? Is it easier to lift a large stone under water than in the air? Why? From the experiment the pupils ought to be able to answer all these questions.

Why does wood float on water? Why does iron sink? Why will an iron kettle float? Will it float with a weight in it? Why will large iron ships float and carry heavy loads? How can you determine the load that a floating body will carry without sinking?

Procure a paper balloon. Inflate it out of doors with hot air. Why does it rise? If you wish to recover the balloon, hold it captive by a string attached to the frame. Why will a large balloon float and carry several people? How high can a balloon rise? Why does it stop rising? These experiments and questions call the attention of the pupils to the buoyant force of liquids and gases and the practical uses which are made of this force.

37. Other Lessons. Use similar plans for lessons on sound, light, heat and electricity. Use a good text-book in physics as your guide. Construct simple apparatus and keep the work within the capacity of the pupils. With the employment of such means the pupils of the grammar grades should, before completing their work, have a fair knowledge of the elementary principles of physics.

STUDIES OF THE WEATHER

38. Importance. Changes in weather occur according to the operation of certain fixed laws which control atmospheric phenomena. Many of the underlying principles upon which these changes depend are easily understood, and a knowledge of them enables one to forecast the weather of one's locality for several hours with a good degree of accuracy. Ability to do this is of practical value, and an understanding of atmospheric phenomena and the principles upon which they depend dispels superstitions about the weather. Moreover, exercises of this nature are always interesting.

39. Winds. How is your schoolroom warmed? How is it ventilated? If a furnace or a jacketed stove is used, have the pupils test the direction of air currents in different parts of the room. For this purpose use strips of thin tissue paper about one foot long and two inches wide. Where are the upward currents? Why are they in that part of the room? Where are the downward currents? How do you account for them? Of what use is the chimney to a lamp? What is the direction of the air current in the chimney? Why?

If you build a fire out of doors, will it create currents in the atmosphere? Draw a diagram illustrating the directions which these currents will take. The answers to the above questions and solutions of the problems to which they give rise should make clear to the pupils the cause of currents in the atmosphere. When these causes are understood the class is prepared to study the weather. Observations should be made systematically and carried through the term, a daily record being kept of the temperature, winds, condition of the sky, and the state of the weather. This can be recorded in two ways—by using tables prepared for the purpose and by constructing a weather chart upon which each of these facts will be graphically represented. These exercises will occupy but a few minutes each day, but they will need to be supplemented now and then by a special lesson.

WEATHER RECORD, JUNE

Day	Date	Temperature	Wind		Sky	Weather
Sat.	1	68	S. W.	Mod.	A. M. Clear P. M. Cloudy	A. M. Fair Even. Showers
Sun.	2	80	S. W.	Strong	Cloudy	Rain
Mon.	3	65	N. W.	Mod.	A. M. Cloudy P. M. Clear	Fair

Begin the work with the following questions: What is wind? How is wind caused? Why is wind much stronger at some times than at others? From what direction do the prevailing winds come?

Winds are horizontal movements of the atmosphere and are caused by the uneven temperature of different regions. Lead the pupils to apply the principles learned in connection with the study of warming and ventilating the schoolroom to the circulation of the atmosphere in general. Observe the order in which winds change. For the same locality this seldom varies, and over the greater part of the United States it is from southwest to west,. northwest, northeast, east, south and southwest; that is, the great movements of the atmosphere are rotary, turning in the direction of the hands of a watch when the dial is in a horizontal position. What is the effect upon temperature caused by this variation of the winds? Do the prevailing winds come from one direction in summer and from another in winter?

40. Humidity. Procure a shallow pan with square corners. An ordinary cake tin will answer the purpose. Pour in water to the depth of one inch. Set the pan in the schoolroom where it will not be specially affected by heat or winds. Have the pupils observe the gradual lowering of the water. How many days are required for it to lower one-half inch? At the same rate, how much water would have disappeared during this time from a surface as large as the schoolroom floor? From an acre? From a square mile? Problems of this kind can be used with seventh or eighth grades, or with the oldest pupils in some rural schools.

What hastens evaporation? What tends to prevent it? Do you think evaporation is equally rapid over all parts of the earth? Why? What is your idea of the quantity of water daily taken into the atmosphere by evaporation? From what source is most of this water taken?

Humidity is the term used to indicate the amount of water vapor in the atmosphere compared with the amount which it can contain. This amount depends upon temperature. The amount that would make cool air damp would not be noticeable in warm air. When the air contains all it can hold, it is said to be saturated.

41. The Dew-Point. Pour into a tin vessel some cold water. Wipe the outer surface of the vessel so that it is perfectly dry. How do you account for the moisture which soon gathers upon it? After the pupils understand the reason for the gathering of the moisture, perform another experiment. Partially fill the dish with water of the same temperature as the room. Stand the thermometer in the water, then sprinkle in slowly crushed ice or snow, watching carefully for the appearance of moisture on the outside of the dish. Note the temperature at which this begins to form. This indicates the temperature at which the atmosphere becomes saturated and begins to deposit its moisture. This temperature is known as the *dew-point*. How is dew formed?

Why is there more on some nights than on others? Why does it gather in larger quantities on some objects than on others? Of what use is dew to vegetation?

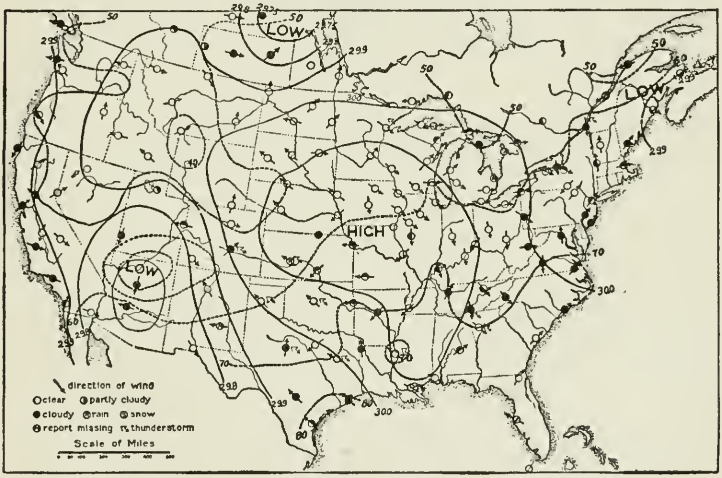
42. Clouds. When you breathe into a cold atmosphere what do you see? Ask the pupils to observe the steam issuing from the spout of the tea-kettle. Why is it invisible just at the mouth of the spout? What makes it visible a short distance from the spout? What is fog? What are clouds? Does fog ever change to clouds? Under what conditions do fogs and clouds form? What winds produce cloudy weather? Why? What winds produce clear skies? Why?

The answers to these questions will require observations extending over considerable time, and it is quite probable that you will need to assist the pupils by other questions or by explanations in finding the cause for fogs and clouds. In connection with these explanations, remember the influence of dust in the atmosphere upon the formation of clouds. Particles of dust attract water vapor and assist in its condensation; therefore, dust is an important agency in cloud formation.

43. Rainfall. When the temperature of the atmosphere falls below the point of saturation, a part of its moisture is precipitated as rain or snow. Have the pupils observe the conditions which cause storms, until they understand how rain is produced. You may not be able to explain satisfactorily peculiar local conditions, if they exist, but you should be able to explain how mountain ranges located like the Rocky Mountains affect the rainfall of the regions upon each side of them, how local showers are caused and why some winds bring rains and others fair weather.

44. Weather Bureau. Through the weather bureau the national government comes in contact with nearly all of the people, and it is of practical advantage to everyone to be able to read the weather maps and to understand the meaning of the signals displayed at weather observatories and in many other places. Before you can give lessons upon this subject you will need to understand the barometer and be able to read the weather maps and signals yourself. If not familiar with these, consult a physical geography or an elementary meteorology. Study the weather map printed here and answer the following questions:

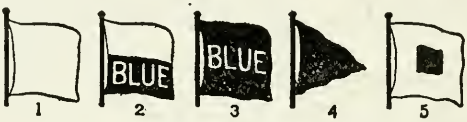
What do the heavy full lines represent? What do the numbers at the end of these lines indicate? What do the heavy dotted lines represent? What states are crossed by the isothermal 60°? In what places did thunder storms occur on that day? In what states did clear weather prevail? In what localities was the sky partially overcast with clouds?



WEATHER MAP

Weather maps can be procured from the nearest weather observatory, and frequently from someone who receives them regularly from the bureau. They are usually displayed in postoffices and often in other public places. With the maps in the hands of the pupils, conduct exercises similar to those indicated above. An occasional exercise of this nature will enable the pupils to read these maps without difficulty.

Study the weather signals as given in the following figures. You can often interest the school in this work by having the older pupils prepare a set of signal flags. The girls can make the flags, and the boys can procure and mount the flagstaff. Then run up the flags each day to represent the forecast obtained from the weather bureau. These forecasts are sent to all postoffices and it is seldom that a school is so situated that they cannot be obtained daily. For the making of desirable flags, the following material will be needed: Five yards of white muslin, five yards of blue and two yards of black calico. Obtain unprinted calico. This material will make a set of flags one yard square for the full flags and triangles one yard long for the half-flags. If flags a half-yard square are desired, only one-fourth this quantity of material will be needed. Drill the pupils on the use of the flags until they can give the meaning of each combination at sight. Have the pupils compare the forcasts with their daily record as explained on page 62, and determine what proportion of the forcasts are correct.



WEATHER FLAGS

1—White: fair weather. 2—White and blue: local rain or snow. 3—Blue: general rain or snow. 4—Blue triangle: change of temperature; when above another flag, warmer; when below, colder. 5—White with black center: cold wave.

45. Aids. At the end of each division of the lesson on Elementary Science, books pertaining particularly to that division have been mentioned. Those given here are of a more general nature. It is assumed that every teacher has good text-books on physics, botany, zoology and physical geography.

Nature Study and Life. Hodge. 514 pages. Ginn & Co. This is the most helpful book on science lessons to be obtained. The text is clear and practical, and the illustrations are of great value.

The Study of Nature. Schmucker. J. B. Lippincott & Co. A plain, practical and helpful book. The work described is within the reach of all teachers and pupils.

Special Methods in Elementary Science. C. A. McMurry. 275 pages. Macmillan Company. This is a very helpful work in planning a series of lessons and preparing type studies. The bibliography is valuable.

Elementary Physics. Gifford. Teachers' edition. Thompson, Brown & Co. This little book contains many suggestions for experiments that can be performed with home-made apparatus.

WORK BY GRADES

46. Suggestion. The subjects treated in this lesson and the one preceding, together with the following outlines, indicate what may be done in each grade. These illustrative lessons and outlines are sufficient to give the teacher a working plan for any other branches of science which she wishes to introduce. The work in physiology is so closely associated with the work in school hygiene that it is explained in connection with that topic in Volume One, on *Hygiene.* In most schools, lessons on common minerals and on some chemical changes, such as combustion, fermentation and the action of acids upon alkalies, should be given.

The Study of Plants

47. Fourth Grade. The botany work in the fourth grade presupposes the mastery of the lessons in nature study in the previous grades. In the fourth grade attention should be given to the following:

(1) Study of small fruits, berry, squash, apple, plum.

(2) Planting and germination of seeds in window gardens or school garden.

(3) Raising flowers and vegetables.

(4) Study of simple spring flowers.

(5) Care of the garden through the summer. If this is a school garden special arrangements should be made for it.

(6) Recognition of common trees by their bark, branches and leaves.

48. Fifth Grade. The work of the fifth grade covers some of the same ground as that in the fourth, but the study extends further and includes more complex subjects:

(1) Compound fruits; raspberry, blackberry, capsule.

(2) Collection of seeds for planting in the spring.

(3) Branching of trees.

(4) Study of the simplest fall wild flowers.

(5) Life history of a simple plant, as a violet or morning glory. See page 506, *Study of Corn.*

(6) Raising flowers and vegetables in the garden.

(7) Study of buds and leaves.

49. Sixth Grade. Pupils of the sixth grade can study successfully the more minute parts of the plant:

(1) Dandelion, sunflower, asters.

(2) Methods of seed dispersal.

(3) Weeds. See Volume VI, page 123.

(4) Coloring of autumn leaves.

(5) Recognition of woods by their structure and appearance.

(6) Work on the garden continued. Competitive raising of flowers and vegetables.

(7) Spring flowers not previously studied.

(8) Poisonous plants.

50. Seventh Grade. The botany work of this year should place emphasis upon the economic features of this subject and the protection of plants during the winter:

(1) Composite flowers, sunflower, goldenrod, asters.

(2) Special study of one tree as a type.

(3) Competitive gardening, raising flowers and vegetables.

(4) Life history of an economic plant, such as wheat, corn or cotton. See page 506, *Study of Corn.*

(5) Flowerless plants, mushrooms, mosses, ferns, or other simple plants.

51. Eighth Grade. In the eighth grade the work of the previous grades should be summed up:

(1) Classification of fruits.

(2) Characteristics of the most common Orders of plants and the leading flowers belonging to each.

(3) Plant physiology.

(4) Competitive gardening.

(5) Preservation of forests.

52. Ninth Grade. The botany work of this grade will include the study of the subject from a text-book and the plan of the book should be followed.

The Study of Animals

53. Fourth Grade. The work in zoology in the fourth grade is a part of the nature study lessons and is carried on entirely by observation:

(1) Study the dog.

(2) Ducks and geese.

(3) The care of poultry.

(4) Common insects, such as the fly, bee and wasp. See pages 40-50, Sections 3-24.

(5) Rats and mice, and the best means of exterminating them.

(6) Common songbirds. Page 522.

54. Fifth Grade. The work of the fifth grade should enter somewhat more into detail than that of the fourth, and should include the study of animals and birds as types of the different Orders which they represent:

(1) Study the squirrel or rabbit as a type of the gnawing animals (rodents).

(2) The horse, the turtle, the muskrat and the salamander can be studied in a similar manner.

(3) Insects of the garden, giving special attention to those which are destructive, such as the cabbage worm and the currant worm. Volume VI, pages 134-138, *Destructive Insects.*

(4) Clams, crawfishes, snails.

(5) Common birds, giving special attention to birds that feed upon destructive insects. Page 522, *The Study of Birds*, Sections 23-42.

55. Sixth Grade. In this grade it is well to give some attention to zoology during the winter months:

(1) Study the feeding and care of livestock.

(2) Birds that spend the winter in your locality. Page 522, *The Study of Birds.*

(3) The state laws for the protection of birds.

(4) Noxious insects, including those which are specially destructive to certain crops, such as the codling moth, chinchbug and Hessian fly. Volume VI, page 139.

(5) The earthworm, the mole, ants, spiders.

(6) Fishes common in the ponds and streams of your locality. In connection with this, call attention to the laws for protecting fish.

56. Seventh Grade. The work of the seventh grade should emphasize the economic feature of zoology, showing the value derived from certain animals and birds and the injury caused by others:

(1) Life history of the toad. Same plan as adopted for study of the mosquito, Sections 15-20.

(2) Life history of the cat as a type of flesh-eating animals.

(3) Insects continued, taking up those that have not previously been considered, but are of such importance as to warrant devoting time to them.

(4) Continue the study of fishes. By use of reference works this can be continued to salt-water fishes; the important food fishes should be considered.

(5) Bird study continued, giving special attention to the English sparrow and other birds which destroy crops. Page 522, *The Study of Birds*, Sections 23-42.

57. Eighth Grade. In the studies of the eighth grade all previous work should be summarized and unified:

(1) The study of the ox as a type of cud-chewing animals.

(2) The study of animals which destroy noxious insects and animals, as the bat, the porcupine and the weasel.

(3) Insect pests from an economic point of view. Volume VI, page 139.

(4) Game birds and bird laws. Also continue the study of song birds in accordance with the plan in page 522, *The Study of Birds*.

(5) Frogs and salamanders.

(6) The chief characteristics of the leading Orders of animals, such as the rodents, the carnivorous animals and the hoofed animals, especially the ox tribe. The extent to which this work can be carried will depend upon the strength of the class and the time that can be devoted to it.

58. Ninth Grade. This grade should continue the work outlined for the eighth grade or pursue the subject by the use of an elementary text-book. In the latter case, the plan of the book should be followed.

The Study of Common Things

59. Fourth Grade. The work in physics which can be attempted in the fourth grade will depend in a measure upon what has been discussed in the nature study lessons of the previous grade. The work should be very simple and should consist chiefly in calling attention to the principles involved in numerous acts of everyday life. In the outline here given, the term *physics* is used in its broadest application, and some of the lessons suggested are closely related to chemistry:

(1) Water in its various forms and uses, as water, ice, snow, frost, vapor, steam.

(2) A few common tools, as the crowbar, the hammer and the hatchet or ax.

60. Fifth Grade. Continue the work of the fourth grade:

(1) The study of common implements about the home and school, as stove, lamp, furnace, egg-beater and meat-cutter.

(2) The study of ventilation; ventilation of sleeping rooms, the schoolroom, churches and public halls. Show the injurious effect of impure air.

(3) The formation of dew, fog and clouds.

61. Sixth Grade. Some of the lessons in this grade involve the principles of chemistry:

(1) Combustion, including the different kinds of fuel with which the pupils are acquainted.

(2) The action of soap and other similar preparations in cleansing. The ingredients in soap, and how it is made.

(3) Heat. How heat is produced; how it travels; conductors and non-conductors. The thermometer; construction and use.

62. Seventh Grade. The pupils in this grade should apply their knowledge of arithmetic to simple problems in physics:

(1) The mechanical powers (Sections 26-30).

(2) Pressure of the atmosphere; the siphon; the lifting pump (Section 33); the force pump.

(3) Sound; how it is produced; how it travels. Principles of the musical scale; musical instruments.

63. Eighth Grade. The work of the eighth grade can be somewhat more advanced but should be closely related to that of the seventh:

(1) Light. Sources of light; how it travels; reflection and mirrors; refraction; lenses; some optical instruments; camera; opera glass, microscope.

(2) Electricity; some of the ways electricity is produced; the electric current; conductors and non-conductors; electricity and magnetism; the dynamo, the electric motor, and some of the uses of electricity.

(3) Study of the atmosphere in its relation to the weather (Sections 38-43).

TEST QUESTIONS

1. Would the dragon fly answer the purpose as well as the grasshopper for studying the parts of an insect? If so, can you see any difficulty attending its use?

2. Besides a knowledge of insect life, what should the pupils gain through such studies as those of the grasshopper and the mosquito?

3. Name ten insects which pupils can study with profit after the plans given in their lesson.

4. To what Order does each of the following insects belong: katydid, potato bug, ladybird, cabbage butterfly, bumblebee, ant, the insect that produces the currant worm?

5. Present a plan for the study of the squirrel or some other animal common to your locality.

6. Why should pupils of grammar grades study the elementary principles of physics?

7. What is a machine? Can a machine create power? Why? Of what advantage are machines?

8. Describe the lever as illustrated in common shears, naming the parts and showing what constitute the power and the load respectively.

9. Why does warm air rise? Why does an upward current of warm air cause the formation of clouds?

10. Explain how you would use a weather map with a class of seventh or eighth grade pupils, and what would you teach from it.

CHAPTER TEN

INTERESTING NATURE LESSONS

1. Purpose. Pupils in the intermediate and grammar grades take an active interest in the habits and life processes of animals and plants, especially in those peculiar habits for which such animals as the fox, the raccoon and the prairie dog, are noted. The peculiar nests of some birds, such as those of the Canada goose, the sand swallow and the pied-billed grebe, are ever sources of wonder and amusement. The teacher who can give this information to her pupils is always sure of their interest and attention.

The lessons on the following pages with their accompanying illustrations, which were prepared especially for *Public School Methods*, are designed to furnish the teacher with much valuable and interesting material concerning animals and plants, and to furnish it ready for use in the schoolroom. The lessons lend themselves to a variety of uses. These stories told at the morning exercises are a great incentive to promptness on the part of the pupils. Moreover, the story may be so told as to form the keynote for the day's work. Children seldom think how patiently and industriously birds and animals work in building their homes, and providing food for themselves and their young. The lessons call attention to excellent examples of industry.

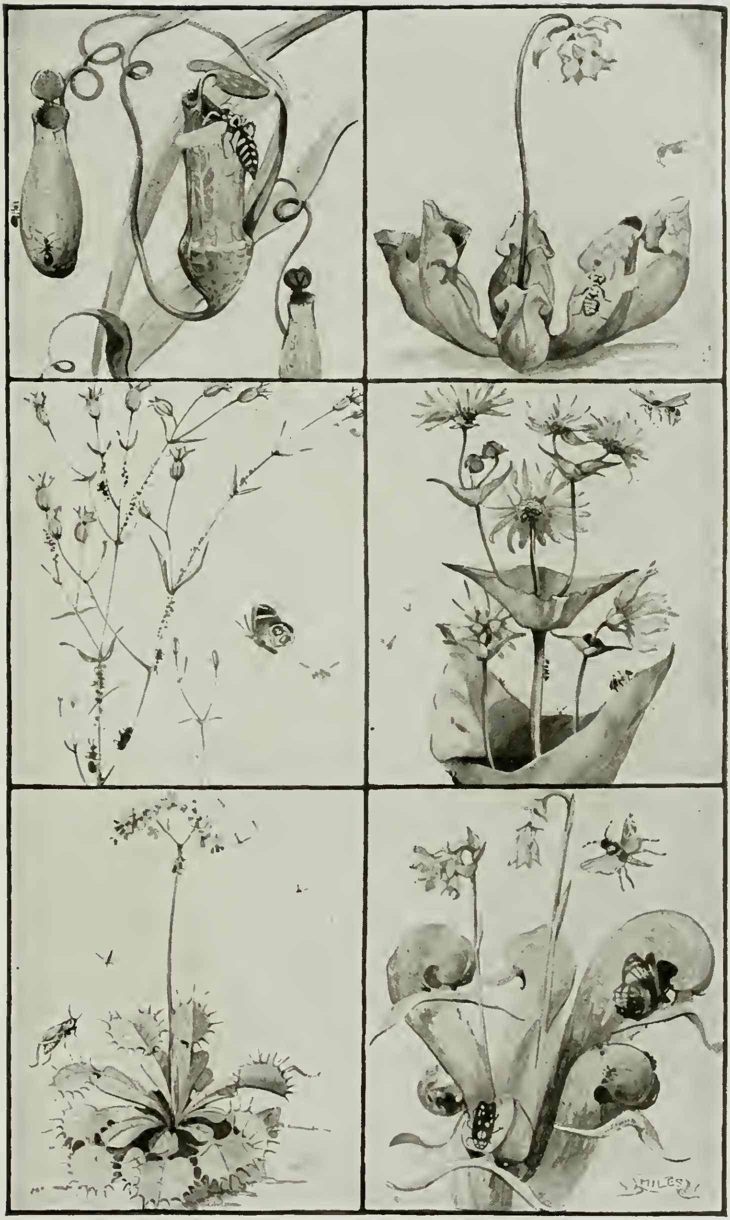
This material is also valuable for language work in these grades. Children like to talk and to write if they have something to talk and write about. Here is a fund of information upon which the teacher may draw for both oral and written exercises. Again, these lessons make pupils keen observers. The story of the fox or the coon will lead them to observe these animals more closely if they are found in the locality. If the animals and birds described here are not found in the locality, the lessons will lead the pupils to observe those that are there, with greater care than before.

Now and then one or more of these stories may be read or told by a pupil at a Friday afternoon program, to which it will lend variety and interest. Besides the uses here mentioned, the progressive teacher will find numerous others of equal value. The more she studies the lessons, the more valuable they will become to her.

2. Insect-Eating Plants. Plants in general obtain their food from the soil and the air, but there are a few which are so highly organized that they require a richer food for part of their nourishment, and these plants feed upon insects. All plants obtain their food from the soil through their roots, and that from the air, which is carbon in the form of carbon dioxide, through the leaves. Most insect-eating plants are provided with special organs for trapping the insects and absorbing the nourishment which they provide.

(a) PITCHER-PLANTS. All members of the pitcher-plant family have peculiar trumpet-shaped leaves. In some the leaves are clustered around the foot of the stalk which bears the flower, as in the common pitcher-plant shown in the upper right-hand corner of the accompanying illustration. These leaves have a broad opening which catch the water when it rains. The mouth of the tube, or trumpet, is studded with stiff hair-like projections which point inward. Insects enter through this opening, but they cannot get out. They are drowned in the water, and the nourishment provided by their decaying bodies is absorbed by the leaf and stem leading to the roots. This plant is common in marshes and peat bogs in the Northern states, where it is sometimes called the *Sidesaddle Flower*. The leaves have dark purple veins, and the flower is a bright purple with a yellow umbrella-like shield in the center. From these characteristics the plant is easily recognized, and a specimen may be secured for the school.

In the pine barrens of North Carolina and Florida, we find pitcher-plants whose cups are protected with lids so that the rain cannot enter. A narrow wing extends along one side of the pitcher, and this secretes a honey-like substance which



Made specially for Public School Methods

INSECT-EATING PLANTS

Nepenthes
Snap-Dragon Catch-Fly
Sundew

Pitcher-Plant
Cup-Plants
Darlingtonia

attracts the insects to the mouth of the pitcher. If the insect enters it is drowned in a liquid secreted by the plant.

(1) *Nepenthes.* The nepenthes, shown opposite the pitcher-plant, is sometimes seen in greenhouses. It is a tropical plant, one variety being found in the Malay Peninsula and another in northern Australia. Nepenthes are climbing plants, and sometimes in their native forests reach to the top of tall trees. The leaves are very peculiar. First there is a flat blade like an ordinary leaf, then there is a long stalk like a tendril that aids the plant in climbing, and at the end of this stalk is the pitcher, which in the small varieties, some one says, looks like a cream jug. The pitcher is covered with a lid, and the inside around the rim is very smooth. If an insect falls in, it finds no foothold by which it can climb out, and is drowned in a liquid secreted by the plant.

(2) *The Darlingtonia.* The Darlingtonia, shown in the lower right-hand corner of the illustration, is found in the mountainous regions of California, where the people call it *Calf's Head,* from the shape of the pitchers. The pitcher is covered with a large hood which ends in two spreading wings that have the appearance of a fish's tail. Some of these pitchers are three feet high and are brightly colored to attract the insects. Around the mouth of the hood and on the fish tail there is a sweetish substance which attracts the insects and lures them on into the fatal pitcher, which is covered with stiff hairs pointing downward. It is an easy matter for the insect to crawl into the pitcher and down to the bottom, but practically impossible for it to crawl out. The hairs obstruct its passage and the hood shuts out the light, although thin spots in the leaf forming the upper part give the appearance of windows, through which some light enters. The bewildered and fatigued insect falls back to the bottom of the pitcher, where it dies. As might be expected from its size, the darlingtonia goes after "big game," grasshoppers, large beetles, and, in some instances, even small birds being caught in its pitchers.

(b) SUNDEW. Sundews are small plants found in marshes and bogs. The most common variety has a rose-shaped cluster of roundish leaves at the foot of a single stalk, upon which small white flowers are borne at the summit. Upon the leaves are found numerous dark red bodies, called glands. These secrete a sticky substance which catches and holds insects that alight upon the leaves. When an insect is caught the leaf gradually folds over it and absorbs the nourishment it yields to the plant. Without insects upon which to feed, sundews live but a short time.

(c) VENUS'S FLY-TRAP. Venus's fly-trap is a near relative to the sundew, which it closely resembles in its general appearance. Like the sundew it has a cluster of leaves at the foot of the flower stalk. These leaves are the most curious part of the plant. The blade is hinged in the middle so that the two halves can close like a trap. The upper surface has a few hairs or bristles which are very sensitive. When an insect alights upon the leaf and touches one of these bristles, the leaf immediately closes and entraps the intruder. The leaf remains closed until all the nutriment from the insect is absorbed, when it opens and is ready for the next victim. One peculiar thing about this plant is that the leaves are so constructed that very small insects can crawl out after the leaf is folded. This curious little plant is found in the eastern part of North Carolina and along the coast of South Carolina, and nowhere else in the world.

(d) OTHER PLANTS. The snap-dragon catch-fly is a common plant of the field and roadside in early summer. It has small white flowers that open at dusk and are closed during the day. One would scarcely notice this plant until attention is called to a curious fact about it. Around the stem near the roots and between each of the two upper joints are dark brown bands of a sticky substance, over which insects cannot pass.

The Cup-Plant. The cup-plant is found along river banks and in lowlands. The leaves clasp the stem so as to form a cup in which rain water gathers, and in which many insects are drowned. This is a fall plant and can be most easily found in September. Some botanists think that the insect-catching devices of the cup-plant and the catch-flies are for the purpose of self-protection, that is, they destroy insects which would otherwise feed upon the plant.

3. Neighbors of Woodland and Field. This drawing presents some of our common woodland friends. Most boys and girls in the country are more or less acquainted with some, if not all, of these animals. The knowledge they already possess will make them eager for more, and they will be delighted to see what new facts they can discover. In giving these lessons it is well to secure the coöperation of the pupils.

(a) FLYING SQUIRREL. The flying squirrel is a most interesting little fellow, but it is difficult to learn much about him because he sleeps during the day and is active during the night. The coat is very fine and soft. It is drab above and pure white on the under parts. On each side there is an extension of the skin joining the fore and hind legs. When the legs are spread out this forms a parachute that enables the little animal to descend with safety from a much greater height than any other squirrel. His leaps from bough to bough cover such long distances that he seems to fly through the air, and from this circumstance he has obtained his name. The flying squirrel cannot fly like a bird, he can only descend safely from great heights because of this parachute structure, which partially supports him in the air. The head is nearly round, the eyes are large and black, and the ears have a nervous twitch.

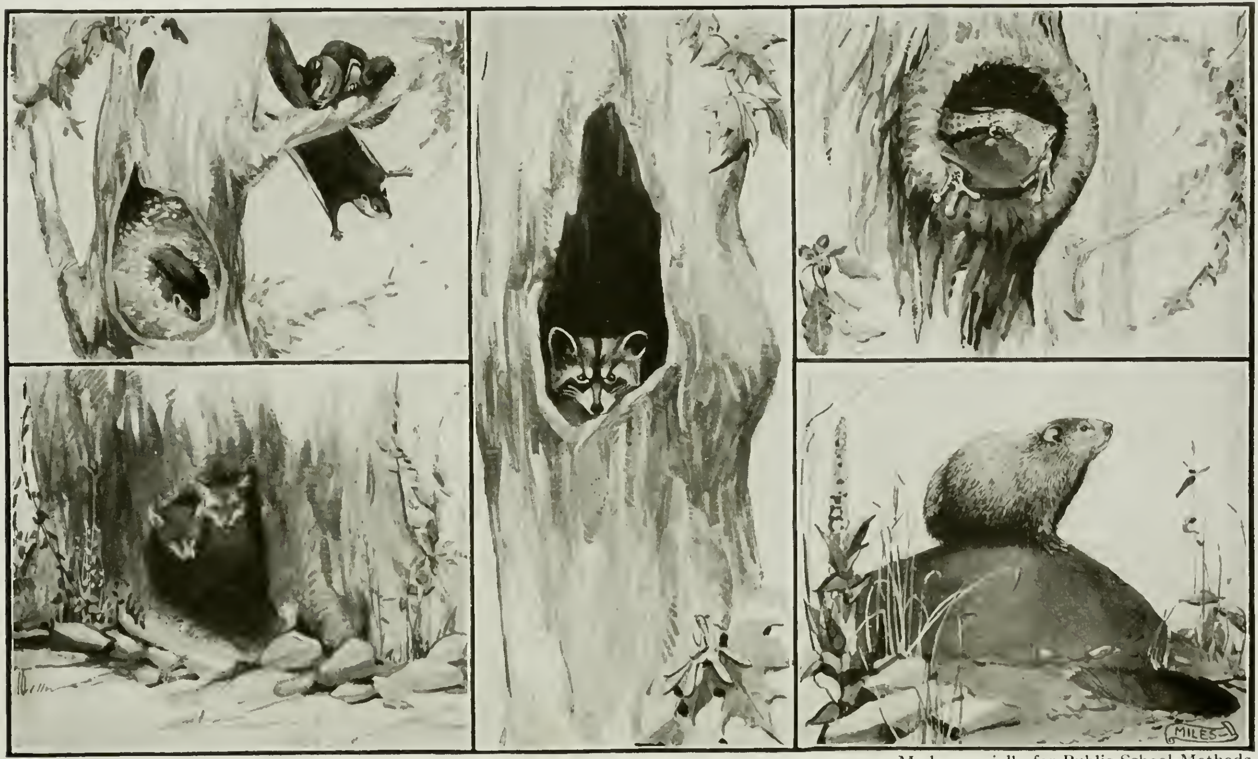
Flying squirrels make their homes in a hollow tree, occupying an abandoned woodpecker's nest, a red squirrel's nest or a cavity which they have provided for themselves. Sometimes twenty or more are found in the same nest, but the usual number is from four to six. A few taps on the log or tree in which they have their home will usually bring them out to discover the cause of the disturbance. First a little head appears, then the squirrel comes out, followed by another, and this one by a third, and so on until all have come out. These squirrels feed upon nuts,—acorns, hazel and beech nuts being preferred.

Flying squirrels make interesting and attractive pets. If caught when young they soon become very affectionate and take great delight in chasing each other over the clothing of one who is kind to them, hiding in the pockets and folds of his garments. When a flying squirrel goes to sleep it rolls itself into a ball which seems to be tied together with its tail.

The flying squirrel is found in northern New York, southern New England, and all the other states east of the great plains. The species in Florida is slightly different from that farther north.

(b) Fox. "As cunning as a fox" is a common expression wherever this wily animal is known. The red fox is one of the wisest, boldest and most cunning of animals. Whenever foxes are found in any numbers they kill young lambs, rob henroosts and commit other depredations upon the farmer, who becomes exasperated because they always outwit him in his attempts to capture them. They live in holes and caves under rocks and hollow trees. Our illustration shows two young foxes looking out from the entrance of such a home. How bright and friendly they appear! But when darkness falls, guard well the poultry. This does not imply, however, that foxes hunt only at night. If hungry, they are as likely to visit the poultry yard at midday as at midnight, and apparently with as great a degree of safety, for they are seldom caught. The animal is too shrewd to visit the same place twice.

Anecdotes about foxes are innumerable, and all have to do with their cunning and boldness. One authority seems to think that in most fox hunts in America the fox has as much fun at the expense of the hunter as the hunter has with the fox. A favorite trick of the fox, when followed by hounds, is to cross deep water where the ice is just strong enough to bear him up, but so weak that it will break under the weight of the dogs. Many valuable dogs have been lost by following a fox into this dangerous trap. Another trick is to throw the dogs off the scent — to walk over wet stones in the bed of a brook, then leap to the opposite bank, turn upon his tracks and follow the hunter while the dogs are blindly pushing on far in advance.



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NEIGHBORS OF WOODLAND AND FIELD

Home of the Flying Squirrel
Home of the Fox

Home of the Raccoon

Home of the Tree Frog
Home of the Wood Chuck

One reason why it is so difficult to shoot a fox is that the animal has wit enough to keep some object between himself and the hunter until he is out of reach of the gun. He can run very fast and easily outdistance the dogs when he is hunted. In the great forests where only trappers are seen, the fox is more easily caught, and it is from these regions that most of the valuable fox fur is obtained. The fox is found throughout North America as far south as Georgia.

(c) RACCOON. Peering from his doorway in the center of the illustration, is "Brer Coon," as the colored people in the South are accustomed to call him. He is generally a mischievous and troublesome neighbor to the farmer, especially if the latter raises corn and poultry, for the coon is very fond of both. Moreover, he has a wasteful habit of destroying much more of anything than he eats. He may kill a dozen chickens and eat one, or destroy a bushel of ears of corn and eat three or four. It is needless to say that in the corn belt the farmers entertain no friendly feeling towards the coon.

The raccoon is a short, somewhat thick animal with a heavy coat of grayish-brown fur, an intelligent pointed face, and fore paws which imitate the human hand in shape. The animal spends most of his time in the trees, where he usually has a home in a hollow trunk of some large one. He sleeps by day and hunts his food by night. He will eat almost anything—berries and other fruits, green corn, meat and fish, and even insects and reptiles.

He is easily caught because of his habit of running over logs and along fallen trees. Traps placed on these are sure to catch the unwary coon and hold him until the hunter relieves him of his misery and carries away his skin, for which a good price is paid. The fur is durable and inexpensive, consequently in cold regions it is in constant demand for coats, caps and robes.

Raccoons, when taken young, are easily tamed, and make pleasing pets, though they have to be closely watched because of their attraction to bright objects, such as tin dishes, silver spoons and mirrors, which they may carry off and hide. They are also likely to trouble poultry. They are playful and may be taught simple tricks, such as searching one's pockets for food. When given meat the coon washes it before eating it, and this service the little animal insists upon doing for himself, either refusing to eat meat washed for him, or eating it under protest. He takes the meat in his fore paws and moves it around in the water for a long time until it becomes pale and flabby; then it will suit his taste.

When sleeping in a tree the animal usually lies in the fork between two branches, or flat upon a large branch, and is kept from falling off by smaller branches on either side. The tree is chosen whose bark is so near the color of the coon's fur that the animal cannot be easily seen. Coons seldom wander far from their nests, to which they return after each night's travel in quest of food. For this reason they are easily located and captured. Their numbers do not seem to diminish, and in some localities they become pests because of their depredations.

(d) WOODCHUCK. The woodchuck, often called the ground hog, lives on and in the ground. His home is a deep burrow which he digs with his fore feet, throwing the earth out and forming a mound at the entrance. Some burrows have several openings, but most of them have only two. The woodchuck uses the mound at the entrance of his burrow as a watch tower, and sits or stands erect upon it to watch for the approach of danger, as we see him in the illustration. If a dog, man or any other apparent enemy is seen, the woodchuck drops into his hole. If surprised he utters a sharp whistle before disappearing.

The woodchuck is about twenty-four inches long, has a thick-set body and short legs. The color is grizzly or yellowish-gray with rusty under parts. The feet are black. The hair is coarse and the skins are of little value.

The variety common throughout the Northern part of the United States and most of Canada, lives in open fields, where the mounds formed in digging the burrows often make the operation of the mowing machine somewhat difficult. Horses sometimes step into the large holes and are likely to receive injuries in this way. Another variety is found in Labrador and northward, but it bears a close resemblance to the woodchuck of the United States. In England and some other European countries there is a variety that lives in the forest, making its burrows under trees.

The common woodchuck feeds upon clover, green beans, cabbage and other garden vegetables when he can get them. Since he must take on, during the summer, enough fat to last through his long winter sleep, he consumes a large quantity of food. For this reason farmers regard woodchucks as pests and try to exterminate them. When cornered, the woodchuck is a fierce and determined fighter. The front teeth are long, strong and sharp and enable the little animal to inflict serious, if not dangerous, wounds upon his antagonist. Dogs not accustomed to attacking woodchucks are often beaten by them. Because of his thick skin and heavy coat of fur a shot gun has but little effect upon the woodchuck except at short range. The woodchuck is most frequently caught in a steel trap which is set in the hole near the mouth, but the trap must be chained to a stake driven securely into the ground, for the woodchuck is strong for his size and will take the trap into the burrow if it is not securely fastened. When caught the woodchuck retires into his hole as far as he can and fills the hole in front with earth, but the farmer knows where to look for him so that his attempt at hiding serves no good purpose. If left in the trap a long time the woodchuck will sometimes gnaw off his foot and thus escape.

The woodchuck is one of the laziest of animals. During the long winter he sleeps in his burrow and spends most of the hours of the day as well as the night during summer there. Since he has nothing else to do it is supposed he spends most of this time in sleep. From this slumber he is sometimes rudely awakened by a dog that is digging out his burrow, or by smoke from a fire which some boys have made in the mouth of his hole to "smoke him out." In either case he usually flies through the other opening, only to be overtaken and slain by his pursuer. To the New England farm boy the woodchuck is always an object of interest, for he is the one animal that the boy can hunt and trap with success.

(e) TREE FROG. Can a frog climb a tree? Well, here is one peering out through an opening in a hollow tree far above the ground. How did the little animal get there? This is a tree frog and he has very peculiar feet, as we can see by the illustration. On the under side of the fingers and toes are little disks holding a sticky substance that enables this frog to climb trees, vines and even window panes.

The tree frog is about two inches long. The head is short, throat large and provided with organs which enable the little animal to sing louder than one would suppose possible for so small a creature. One peculiarity of the tree frog is its ability to change color so that it will be of the same color as the object upon which it is resting. On the bark of an oak it will be gray; on a leaf, green, and on an apple tree, brown. So perfect is this imitation in coloring that the tree frog is not easily seen, and by this wise provision of Nature it escapes many of its enenies.

While tree frogs pass most of their lives in trees, they live in the water during the spawning season. The eggs are laid on stalks of grass or reeds at the surface of the water, in which the tadpoles live until fully developed.

These frogs are common throughout the United States and Canada as far west as the one-hundredth meridian, and if the pupils look for them one or more specimens may be secured. They are interesting school pets. They feed upon insects, and if provided with a damp shady place in which to rest they can be kept for a long time.

The song of the tree frog resembles the purring of a cat, only it is much louder. Some liken it, when heard at a distance, to the bleating of a lamb.

4. Nature's Cave Dwellers. (a) THE RABBIT. All children like rabbits and every child is happy when he can have Bunny for a pet. Housing and feeding these gentle little animals are always a source of delight, but the children often wonder what becomes of poor Bunny during the long cold winter if he has to live on the prairie or in the woods. Our illustration shows us how he keeps warm by making an underground burrow in which he makes a nest of leaves. Here we see the little family carefully housed from the cold and snow.

Not all rabbits, however, are protected in this way. The Jack Rabbit, for instance, has only an open "form," as its nest is called, under the shelter of a bush or clump of weeds, and here it protects itself as best it may from the cold and storms of winter. In most regions this rabbit, and most others that live in cool climates, change their coat of brown on the approach of winter to one of pure white. The fur of the winter coat is thicker and warmer than that of the one it displaces, and its pure white makes the rabbit almost invisible in the snow. This provision is necessary because the rabbit is hunted by every flesh-eating beast and bird. About his only defense lies in his power of flight and his protective coloring.

The senses of hearing and smell are very acute, and the rabbit can hear sounds and detect odors much more quickly than man — in fact, he probably hears many sounds that we never hear. When the rabbit senses danger he is off with a bound. He runs by leaps and can outdistance most of his pursuers.

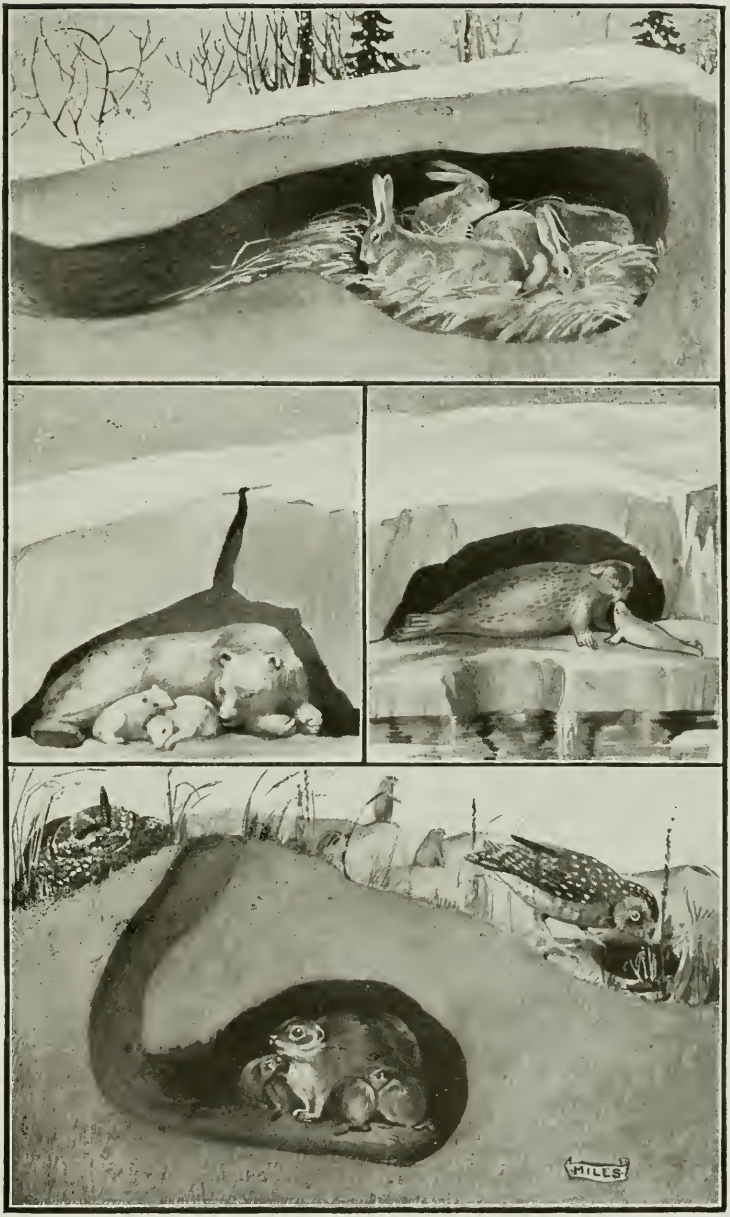
> The long, strong hind legs and the long ears tell the whole bunny story. Ears to hear the approach of the enemy, and legs to propel the listener by long jumps to a safe retreat. The attitude of the ears is a good indication of the bunny's state of mind; if they are set back to back and directed backward, they indicate placidity, but a placidity that is always on guard; if lifted straight up they signify attention and anxiety; if one is bent forward and the other backward the meaning is: "Now just where did that sound come from?" When running or when resting in the form, the ears are laid back along the neck.
>
> — Comstock's *Handbook of Nature-Study.*

Rabbits feed upon grass, buds, leaves and, in winter, upon the bark of trees. They are consequently very destructive to young orchards, and the only sure protection against them consists in winding the trunks of the trees to a point where they cannot reach the bark.

(b) Prairie Dog. The prairie dog has been called a "miniature woodchuck," and the name seems appropriate. These little animals are found in large numbers on the dry prairies of the Central West. They live in colonies, or "dog towns," which are sometimes several miles in extent. They dig burrows and make mounds of the earth like the woodchuck. They are more active than the woodchuck, but otherwise resemble that animal in some of their habits. They feed upon grass and other plants. When an intruder approaches a dog town the inhabitants assemble together and seem to hold a consultation, but upon nearer approach of danger the assembly is suddenly dissolved, and each little member thereof scampers away to his hole.

The rattlesnake, the burrowing owl and the prairie dog inhabit the same region, and this has led to many stories about these animals occupying the same burrow and constituting a happy family. These stories, like many others about animals, are purely imaginative, and should always be carefully investigated before giving them credence. The owl makes its own burrow, though it may now and then occupy one deserted by the prairie dog. If the rattlesnake enters the burrow it is for the purpose of making a meal of the young, and, if possible, the prairie dogs escape.

(c) POLAR BEAR. Here are some baby bears born under the snow. Where are they? How did such a thing happen? These are polar bears, and they inhabit the cold regions in the northern part of North America where it is winter nearly all the year, and where the nights are six months long. During the short summer the mother bear eats and eats and eats until she has accumulated a store of fat upon which she can feed during the long winter night. When that night begins she digs her way into a corner between the rocks or under a bank and lies down to sleep, allowing the snow to drift over her until she is inclosed in a warm snow-house, above which the snow is piled higher and higher as the winter progresses. The heat from the bear's body melts the snow around her so that the house is large enough for her needs, and her warm breath keeps a small opening thawed to the surface. Through this fresh air enters. Here the young are born, and here they remain until summer melts away the snow and sets the little bear family free.



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NATURE'S CAVE DWELLERS

Bunny's Warm Winter Home
Winter Home of the Polar Bear
Winter Home of the Seal
Prairie Dog's Home and its Intruders

Sometimes, however, the Eskimo dogs discover these breathing holes, and their barking tells the Eskimo that a bear or a seal lies under the snow. He then removes the covering and spears the bear, carrying the body to his hut where the flesh is eaten, the hide made into clothing and the bones into knives, needles and other tools.

The polar bear is a large bear, sometimes measuring nine feet from the tip of the nose to the tip of the tail. Its fur is white or yellowish-white, but the nose and lips are black. The soles of the feet are covered with tufts of hair which enable the bear to walk on the ice. Polar bears are often found in zoological gardens, but during the summer they suffer from the heat. They are usually short-lived in captivity.

(d) SEAL. The seal is another animal of the polar regions that makes its house under the snow. Unlike the bear the seal spends most of its time in the water, but it is an air-breathing animal, and must come to the surface to breathe. As the ice forms over the Arctic waters, the seal keeps an opening through which it can come up to breathe. It does this by breaking away the ice with its flippers. It also scoops out a dome-shaped cavity in the snow closely resembling an Eskimo hut, though not so large. Here the seal lives through the winter and here the baby seal is born. The seal swims under the ice far from its home in search of food, but with unerring instinct it returns in as direct a line as the bird flies to its nest.

Sometimes the male polar bear, which does not sleep under the snow during the winter, by his keen sense of smell discovers this seal home. When this happens the bear digs away the snow, captures the baby seal, but does not kill it. Instead he tortures it until the mother comes to the rescue, when he captures her also; then both are killed and furnish the bear with meat for several days.

5. Interesting Bird Homes. (a) CANADA GOOSE. In the keen air of early spring we hear the "honk, honk" of the wild geese as they take their flight to the marshes and lakes of the far north for the nesting season. We always like to watch the A-shaped flock until it disappears on the far northern horizon.

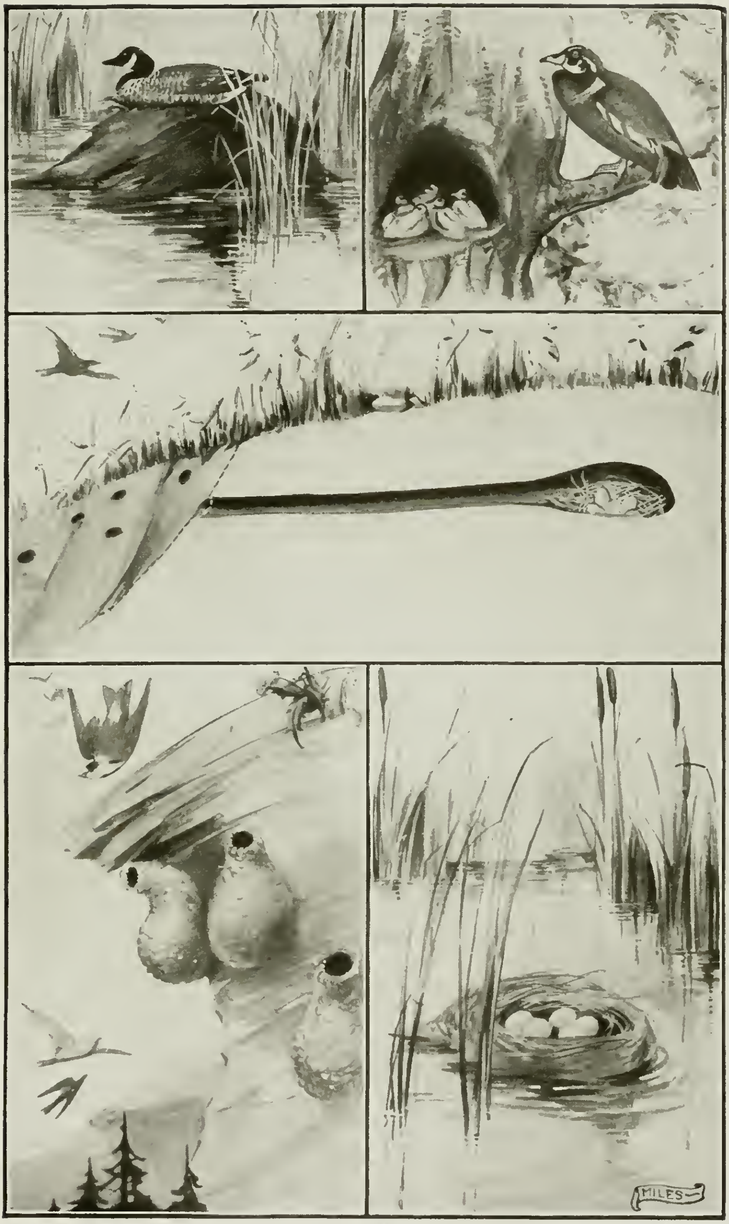
The wild goose, or Canada goose, as it is commonly called, builds its nest on the ground on the border of lakes and in marshes. Sometimes it builds in a tree. In any event, it looks for a place where the nest will be safe from the attacks of minks, foxes and other animals that eat the eggs or young whenever they get an opportunity to do so. This goose does not hesitate to use the abandoned nest of another bird or an animal, and sometimes it chooses curious locations. Here in the illustration we find one on an old muskrat's house. We can at once see from its location that this nest is easily defended from intruders, which cannot approach from any direction without being seen at a distance.

The nest usually contains six large white eggs. While the mother bird is setting, the gander keeps guard and fiercely attacks any animal that approaches. With his strong beak and wings he is an antagonist not to be despised.

The Canada goose has a gray body, black neck, wings and tail, and a spot on the neck and tips of the tail feathers; the wing coverts are white. It is a large, beautiful bird measuring from twenty-four to forty-three inches in length. Its flesh is highly prized.

(b) WOOD DUCK. This beautiful bird is common throughout the United States and Canada. It has a dress of remarkable brilliancy. The head of the male and large crest are purple and green with white stripes; the upper parts are black, the sides gray with bars of black and white, which also mark the shoulders. The brilliancy of its plumage attracts attention to the wood duck wherever it is seen. It differs from other ducks in being able to perch upon branches of trees, and in building its nest in hollow trees thirty or forty feet from the ground, where it is safe from the attacks of animals that usually prey upon ducks and other water fowl. The nest contains fourteen creamy-white eggs. When the young are ready to leave the nest the mother picks them up by the wing one by one, and carries them to the water.

(c) SAND-BANK SWALLOW. The sand-bank swallow is a sapper and miner, and it often digs a hole three or four feet into



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INTERESTING BIRD HOMES

Nest of the Canada Goose
Nest of the Wood Duck
Nest of the Sand Bank Swallow
Nest of the Cliff Swallow
Floating Nest of the Pied Billed Grebe

the side of a bank and then excavates a small chamber for its nest, which is made of small twigs, grass and feathers. The nest usually contains four or five white eggs. Bank swallows usually nest in large colonies, choosing some favorite bank along a stream. This they pierce with holes until it looks like a huge piece of honeycomb. The birds are a little over five inches long, grayish-brown above with white under parts and a grayish-brown band on the breast.

(d) CLIFF SWALLOW. The cliff swallow is a mason. High up on an over-hanging cliff we see his gourd-shaped nest made of pellets of mud with a few bits of straw and grass. The nest is lined with grass and feathers, and contains four or five white eggs with dots and spots of reddish-brown. This swallow frequently builds its nest under the eaves, and for this reason is known in some localities as the "eave swallow." The cliff swallow is about six inches long. The upper parts are a dark steel blue, the forehead is nearly white, the throat chestnut and the breast gray, shading into white. The tail is short and blunt. The cliff or eave swallow is a beautiful little bird and its habits can be easily studied when it nests about buildings.

(e) PIED-BILLED GREBE. But perhaps here is the most curious nest of all — the floating nest of the grebe, or diver. It is a veritable floating island made of sticks and rushes so ingeniously woven and plastered together that it rides upon the water like a little skiff. The nests are usually made near the margins of lakes or ponds, but far enough from land to render them safe from the attacks of cats, skunks and other animals in pursuit of eggs and young birds. The nest usually contains five white eggs tinted with brown.

6. Studies in Nature. Our color plate gives us a glimpse of the honey bee and the bumble bee in their natural environment, the honey bee on the white clover and the bumble bee on the red, each extracting nectar from the flowers.

But how does the bee get the nectar which it transforms into honey? Let us see. If we examine the tongue of a honey bee under a compound microscope, we find it to consist of a hollow tube which can be extended to reach the nectar at the bottom of the flower cup, and the nectar is sucked up into this tube. Now we come to a curious fact in Nature. As some flowers are deeper than others, so do some species of bees have longer tongues than others. For instance, the bumble bee has a longer and stronger tongue than the honey bee. Our illustration shows the bumble bee gathering honey from the red clover and the honey bee gathering it from the white clover. We never see honey bees on red clover for the reason that they cannot reach the nectar in the blossoms.

The bumble bee is a great lazy insect, beautiful in his coat of gold and black. The nest is small and usually made in the ground. The honey is the coveted prize of every country boy, who knows he will find the nests in or near fields of red clover. The nests, however, should not be destroyed, for the bumble bees are necessary to the successful raising of the clover. The red clover blossom will not fertilize itself, but the bumble bee, reaching down into the blossom for the honey, rubs the pollen off the stamens on to the pistil, thus fertilizing the ovule and enabling the plant to perfect its seed.

Some years ago the farmers in Australia introduced red clover into that country, but only the crop grown from the first seeding was a success. The seed raised from that crop would not grow. There were no bumble bees in Australia, so in order to raise red clover they were obliged to import them in large numbers. When this was done it was found that red clover could be raised in Australia as well as in the United States. The farmer who understands raising red clover knows that the bumble bee is one of his most faithful and valuable helpers.

Only the queens live through the winter. The first warm days of spring bring them out of their hiding places ready to make a small nest and lay their eggs. The young bees hatched from these eggs constitute the colony for the season. They build the nest and gather the honey. During the season several queens may live together in harmony in the same nest, but in the fall the old queens and the workers die.

The honey bee gathers both honey and pollen, and a curious fact about this bee's work is that it never mixes the

Painted expressly for Public School Methods

A STUDY IN NATURE

pollen of different flowers. If gathering pollen from the dandelion, for instance, the bee works only on dandelion blossoms until its load is completed, when it flies away to the hive. Should this same bee begin to gather pollen from apple blossoms for its next load, it will confine its work to these blossoms until the load is gathered.

A careful study of the structure of flowers will convince anyone of the importance of bees in the work of fertilization. The best results are obtained when the ovules of one flower are fertilized with pollen from another. In some flowers the stamens mature before the pistil. This is so pollen from another flower may fall upon the pistil, and bees are important agents for doing this work. Flowers like the clover blossom, the trumpet creeper and many others which have deep cups with hooded mouths, are usually made attractive by their brilliant coloring and strong odors. It is interesting to watch the bees as they crawl into and out of these blossoms rubbing off the pollen and carrying it from flower to flower. Moths, butterflies and other insects also aid in this work. It is a remarkable fact that none of these insects visits more than one kind of flower the same day, therefore the pollen which they carry from one flower to another is not wasted by being left in a blossom which it cannot fertilize.

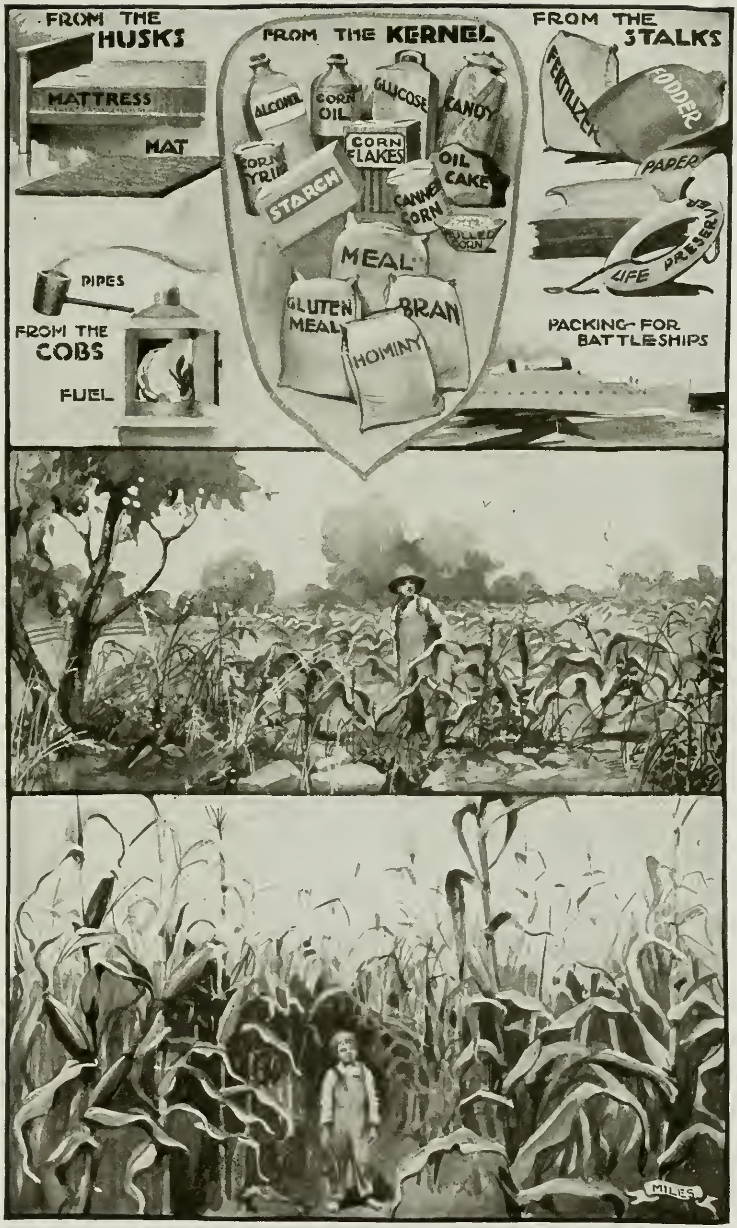
Ants are possibly the most interesting of all insects, and every boy likes to watch them. Our illustration shows how these ingenious little insects sometimes cross a stream by forming a living rope of their own bodies. The leader grasps a convenient grass or reed overhanging the water, the next clasps its antennae around the abdomen of the first, and so on until the bridge is completed. After all have passed over in safety the second ant lets go and the chain falls on the bank. The leader, however, is left on the reed and usually falls into the water and is drowned. Sometimes the hold is broken in such a way that the entire chain falls into the water.

7. Lesson on Corn. Take a grain of corn and explain to the pupils that if we put this grain in the desk and leave it there for a year it will still be a little grain of corn. If we leave it there in the desk, for five or ten years and the temperature is such that it will not decay, it will never be anything but a grain of corn.

However, if we take it out and plant it in fertile soil, in just a few days we will have a little stalk. If we cultivate that stalk and care for it and see that it is given the proper amount of heat, light and moisture and if we keep the weeds away from it, it will grow up into a large stalk and will probably have two or three ears. We can take these two or three ears which were produced by this little grain, and by planting them raise a large field of corn. Then we can take the corn raised in this large field, and in turn, raise a great field as indicated in the lower part of the halftone on the opposite page. This shows a well tilled field. The picture above this shows a neglected field. In the neglected field, note the tree which is sapping the life out of all the corn standing near it. Also note the weeds which are stunting the corn.

Then compare the pupils to the grain of corn. The same Creator that created the little grain of corn that has in it the power of growing great fields of corn and feeding the people of the earth created every one of the pupils, but created them with the power to do greater things, if they will keep the weeds out of their lives, if they will give their minds and their bodies the proper care and the proper development. The cigaret, the plug of tobacco and the whiskey may all be compared to the burrs and other weeds that sap the life out of the stalk of corn.

In like manner the acorn may be used to drive home a moral lesson. Have the pupils bring some acorns to school, and at the opening exercises explain to them that the mighty oaks near the school were once tiny acorns. Also explain to them that the little scrub oaks were once tiny acorns. Compare the mighty oak to Washington, Lincoln, Jackson, Robert E. Lee and our living celebrities, and the scrub oak to those who are filling our prisons and reform schools. (See also the color plate on corn, page 357, and the poem *How the Tiny Acorn Grew*, Vol. III, page 448.)



Corn Products
A Neglected Field
A Well Tilled Field

TEST QUESTIONS

1. Will the honey bee work on two different kinds of flowers the same day? If not, why not?

2. Does the bumble bee work on the white clover? Does the honey bee work on the red clover?

3. How do the ants cross a small stream when they are on the march?

4. What kind of egg is usually found in a deep nest? In a shallow nest?

5. Do practically all birds have an economic value?

6. What bird digs a hole in the sand bank for its nest?

7. What waterfowl sometimes builds its nest on the musk-rat mound?

8. What duck builds its nest in the tree?

9. What waterfowl has a floating nest?

10. What is the common name of the pied billed grebe?

11. What bird builds its nest on the side of the high cliffs?

12. Name the three usual inhabitants of the prairie-dog town?

13. Is it true that the prairie dog, the rattle snake and the owl all live in the same burrow?

14. How does the polar bear get air while it hibernates in its home beneath the snow?

15. How does the seal keep the hole in the ice leading from its home down to the water from freezing during the winter?

16. When the seal goes out in search for food, how does he find his way back to the dark hole under the ice which leads to his home?

17. How do some rabbits keep warm in the Northern climate during the winter?

18. How does the flying squirrel fly?

19. How does the tree frog hang to the tree?

20. Name six plants that get part of their nourishment from insects. Where are these plants to be found?

21. On what kind of soil are these plants usually to be found?

PROJECT-PROBLEM PLANS FOR NATURE STUDY AND ELEMENTARY SCIENCE

Next to Reading, Elementary Science can well be considered the most important subject in the curriculum. Its study develops character, teaches pupils to respect labor, leads them to become self-reliant, acquaints them with their surroundings, leads them to see the beauties of nature and prepares them for real life by enabling them to gain an understanding of the physical conditions of life and the many varied utilities of nature.

It is almost impossible to estimate the importance of this subject. It is related to nearly all subjects in the course of study. Here lies the foundation of elementary geography. The pupil cannot read Longfellow, Whittier or many of the works of the standard authors intelligently without a knowledge of the principles of Elementary Science.

The teacher who follows these plans will have the satisfaction of knowing that he has bridged the great gap between the grades and the high school, for the high school work is not so absolutely foreign to the pupil who has a knowledge of this material. The pupil who is unable to go into high school will have a foundation which will enable him to do effective home study. There is no other subject which makes a greater appeal to pupils or makes their school work more interesting.

When possible, the subjects taught should be adapted to the season. This idea was kept in mind in preparing these plans, and it will not be necessary for the teacher to make many changes in order to adapt the work to his locality. The general index of these volumes will be a great aid in citing the teacher and pupil to correlated subjects.

Note. In references below, where no volume is specified, the page numbers refer to Vol. IV.

PLANS FOR FOURTH GRADE

SEPTEMBER

First Week. Study the honeybee and bumblebee. Have pupils try to find the honeybee working on red clover and the bumblebee working on white clover. Explain why the honeybee does not work on red clover. (See page 592.) Discuss economic value of bees. (a) As producers of food. (b) In fertilizing flowers. (See Vol. VI, page 34.)

SECOND WEEK. Continue the study of bees. Why will the bee not gather part of its load of honey from the apple blossom and balance from some other flower? (See page 593.) Study value of bees. (a) To the fruit grower. (b) To the farmer who raises clover as alfalfa. (c) To mankind in general. Tell the story of the importation of bumblebees into Australia and discuss the protection given the bumblebee by the Australian boy as compared with the American boy who delights in killing the bumblebee because he does not appreciate its value. (See page 592.)

THIRD WEEK. Study ants. Discuss their intelligence. Explain how they bridge a stream of water. (See page 593.) Tell the fable of the ant and the grasshopper.

> One bright, sunny day in June, a Grasshopper, who was frolicking around, met an Ant who was tugging away at a grain of wheat. He invited the Ant to come and dance with him. The Ant answered, "It is well to be happy and enjoy one's self, but winter is coming and I must prepare for that time when food cannot be found." "Winter" scoffed the Grasshopper. "Why, that is many weeks ahead. There will be plenty of time later on to think of that. Come with me for today anyhow." But the Ant refused to listen. He kept to his work while the Grasshopper went on his care-free way.
>
> But some months later, after a severe cold snap, the Ant was awakened one morning by a feeble knock at the door. On opening it he beheld his summer friend almost dead from the cold and weakness. He begged the Ant for a bite to eat. To which the Ant replied, "Very well, here is enough for today, but hereafter you must care for yourself, as I have only sufficient for myself and family." The Grasshopper went sadly away, regretting the precious months during the beautiful summer, wasted in idleness, and wishing that he, like the Ant, had taken advantage of his opportunity. A few days later the Ant came upon the dead body of a Grasshopper, which he recognized as the remains of his once happy and carefree companion.

FOURTH WEEK. Study insect-eating plants. (See Vol. IV, page 578.) Explain how these plants trap the insects for food.

OCTOBER

FIRST WEEK. Study type lesson on the fly. (See Vol. II, pages 106-121.) Explain that this lesson was prepared by Dr. Hodge who has discovered and learned more about flies than any other scientist. Organize a "Swat the Fly" campaign in the school. Have pupils make "swatters," one for each desk. Organize a "Fly swatting" campaign in the homes. Have pupils report what progress thay are making at home. Little prizes might be offered to those killing or capturing the largest number.

SECOND WEEK. Continue study of the fly. Have pupils construct flytraps. (See models, Vol. II, pages 113-115.) Encourage original ideas in trap making.

THIRD WEEK. Prepare for study of insects. Have pupils make insect nets. (See page 543 for plans for making nets.) Make cage. (See page

544.) Get collecting bottles. (See page 544.) Capture grasshoppers, bees, wasps.

FOURTH WEEK. Study the grasshopper. (Page 545.) *First day* — Insect as a whole. (Page 545.) *Second day* — The head. (Page 546.) *Third day* — The thorax and abdomen. (Page 547.) *Fourth day* — The wings and legs. (Page 546.) *Fifth day* — Comparative study. Use butterfly, house fly, etc. (See page 548.)

NOVEMBER

FIRST WEEK. Study the dog. (See Vol. II, page 81.) If there is a well-trained bird dog or a foxhound in the neighborhood, try to have him at the school for observation. Also, try to secure a puppy. Discuss with the pupils the different kinds of dogs, such as bird dogs, foxhounds, greyhounds and Saint Bernards. Tell stories of acts of heroism of different dogs. (See Vol. II, page 292.) Tell of the rescue work done by Saint Bernard dogs in the Swiss Alps. Explain how the dogs must be trained to do this work.

Explain how this dog which you are studying had to be trained. Discuss what training will do for the little pup. Have the pupils tell of the worthless cur dogs they have had or have known. Impress upon them that the pup will be worthless if he is not given the proper training and how he will grow up to be a valuable dog if he is trained by one who understands the training of dogs. Lead the pupils to express their contempt for worthless dogs. Tell them of the dog's ancestors, the wolves, and how the training by man has developed high intelligence in these wild dogs.

SECOND WEEK. Review the lessons on the dog, especially the points on training. Take up by comparison the study of man. Talk to the pupils about the tramps and worthless men. Compare these with our great celebrities, like Washington, Lincoln. Bring in the point of training of man, as in the previous lesson. Impress upon them the fact that it is the well-trained man, like the well-trained dog, that is of value; that each pupil should take advantage of every opportunity to study and train himself; that the well-trained man must obey law and order like the well-trained dog; that every pupil has an opportunity to develop into a Washington, Lincoln, Lee, or Wilson, if he is properly trained for the duties of life. (The teacher himself will do well to ponder over this comparison.)

THIRD WEEK. Take up the study of sheep. (See Vol. VI, page 115.) Discuss the different breeds of sheep, their economic value as producers of wool and food and destroyers of weeds. Discuss plans for eliminating the worthless, sheep-killing dogs, the elimination of which will encourage sheep raising.

FOURTH WEEK. Take up the study of wool. (See Special Lesson, Vol. III, pages 30-34.) Discuss our dependence upon foreign countries for our wool supply and the possibilities of our nation becoming an exporter of wool rather than an importer if the sheep-raising industry is encouraged.

DECEMBER

First Week. Begin the study of poultry. (See Vol. VI, page 120.) Discuss the egg types, meat types, the general purpose types.

Second Week. Study feeding and care of chickens. (See Vol. VI, page 121.) Have pupils bring poultry magazines from home. Discuss building of proper quarters for the protection of poultry during the winter months.

Third Week. Study the holly tree. Explain where this tree grows. Have a branch in school. Study the red berries and evergreen leaves. Why is the holly used so profusely at Christmas time?

Fourth Week. Study the mistletoe. Explain that this is a parasitic plant; that it gets all its nourishment from the trees on which it clings. Study the white berries and evergreen leaves.

JANUARY

First Week. Have the pupils supplied with the new year's almanacs. Discuss the eclipses of the sun and moon of the new year. Mark on the school calendar the dates of the various eclipses. Have pupils watch for these dates and observe the eclipse. For an eclipse of the sun, have smoked glasses for the observation.

Second Week. Study water in its various forms and uses. Discuss contamination. (See Vol. III, pages 177-179.) (See index.)

Third Week. Study ice, snow and rain. (See Vol. II, pages 20, 22.)

Fourth Week. Study frost, vapor, steam, using the above references as types.

FEBRUARY

First Week. Begin the study of common tools, such as the hammer and the saw.

Second Week. Continue the study of common tools — the crowbar, hatchet, ax, etc.

Third Week. Study the flying squirrel. (See page 581.) Study the fox squirrel and the gray squirrel. (See pages 539-540.)

Fourth Week. Study th polar bear. (See page 588.) Explain how the bear gets air while it hibernates; what it lives on during its hibernation; how the little cubs cling to the mother's tail when the mother is swimming through the water; how the polar bear uses only its forelegs in swimming.

MARCH

First Week. If wild ducks are flying, study them in their flight. Study the wood duck as a type. (See page 590.)

Second Week. Study the wild geese. Observe the "V" shape of their flight. Study the Canada goose as a type. (See page 589.)

THIRD WEEK. Prepare boxes and soil for the planting of seeds. Study fertility of the soil in the boxes. (See Special Lessons, Vol. VI, pages 13-16.) Perform experiment, page 16, Vol. VI.

FOURTH WEEK. Have pupils bring samples of seed—corn, oats, wheat and garden seeds. Plant the seeds and observe the germination.

APRIL

FIRST WEEK. Prepare school garden. For suggestions, see Vol. II, pages 30-37.

SECOND WEEK. Plant the seeds according to instructions, Vol. II, pages 34-35. The dates of planting vary in different sections.

THIRD WEEK. Have pupils get trees and shrubs to be planted on the school grounds. Have a location selected and instruct each pupil where to plant his shrub. For instructions on the method of planting the trees, see Vol. V, pages 499-500.

FOURTH WEEK. Arbor Week. Have special Arbor Day program. Programs for this occasion are given in Vol. III, pages 446-460; Vol. V, pages 483-505. (The date of Arbor Day varies in the different states.)

MAY

FIRST WEEK. Begin the study of the common song birds. (See Vol. II, pages 62-66, 128-132; Vol. V, page 522.)

SECOND WEEK. Study the common trees and leaves. Teach recognition of common trees by their bark, branches and leaves. (See Vol. V, pages 519-521.)

THIRD WEEK. Instruct pupils on care of the school garden through the summer. Arrange for volunteers to come certain weeks to water and weed the plants. Teach care of the home garden during the summer.

FOURTH WEEK. Study the morning-glory and the dandelion. (See Vol. II, page 45.)

JUNE

FIRST WEEK. Study the violet and other common wild flowers. (See Vol. II, page 49.)

SECOND WEEK. Review lessons on the fly and other work done during the year.

PLANS FOR FIFTH GRADE

SEPTEMBER

FIRST WEEK. Begin the study of corn. Have a complete stalk. Use the following outline: (See Vol. IV, page 512.) *First day* — Beauty of the plant. *Second day* — Measurements. *Third day* — The root. *Fourth day* — The stalk. *Fifth day* — The ear.

Second Week. Continue the study of corn. *First day* — Varieties of corn. (See Vol. IV, page 515.) *Second day* — Where grown. (See Vol. IV, page 515.) *Third day* — Corn products. (See Vol. IV, page 516; Vol. VI, page 48.) *Fourth day* — Uses of the products. (See Vol. IV, page 515; Vol. VI, page 47.) *Fifth day* — Kafir corn and other substitutes. (See Vol. VI, page 47.)

Third Week. *First day* — Classification. (See Vol. IV, page 516.) *Second day* — History of corn. (See Vol. IV, page 517.) *Third day* — Literature. (See Vol. IV, pages 502, 517.) *Fourth day* — Economic study. (See Vol. IV, page 517.) *Fifth day* — Harvesting of corn. (See Vol. VI, page 46.)

Fourth Week. Study the wheat. Have a complete stalk, if possible. *First day* — Note difference between this plant and the corn plant. (See page 49.) *Second and third days* — Study the two great classes of wheat. (See Vol. VI, pages 50-51.) *Fourth day* — Preparation of the seed bed. (See Vol. VI, page 52.) *Fifth day* — Caring for and harvesting the crop. (See Vol. VI, page 52.)

OCTOBER

First Week. Begin the study of gnawing animals. Select rabbit as type. (See special lesson, Vol. IV, page 586.)

Second Week. Study the horse. (See Vol. VI, pages 95-104; Vol. II, pages 74-77.)

Third Week. Begin study of amphibians, with special attention to toads and frogs. (See Vol. II, page 68.)

Fourth Week. Study the salamanders. (See Vol. II, page 70.)

NOVEMBER

First Week. Study the turtle. (See Vol. II, page 72.)

Second Week. Study clams, crawfish and snails following the same plan as above. Have pupils bring specimens to school.

Third Week. Study destructive insects. (See *Insects*, General Index.)

Fourth Week. Study the coffee. (See McMurry *Type Study*, Vol. VI, page 164.)

DECEMBER

First Week. Study branches of trees and leaves. Have specimens. (See Vol. IV, pages 39, 520.)

Second Week. Study any evergreen tree, pine, cedar or spruce.

Third and Fourth Weeks. Study holly and mistletoe, following plan given for fourth grade.

JANUARY

First Week. Begin the study of common things — stove, lamp, furnace. (See Vol. VI, page 501.)

Second Week. Study the egg-beater, knives, forks and spoons.

Third Week. Teach proper method of holding knife, fork and spoon at table and placing them at plate. (See Vol. VI, pages 507 508.)

Fourth Week. Study lunch boxes. (See Vol. VI, page 517.) Also double-boiler. (See Vol. VI, page 504.)

FEBRUARY

First Week. Begin the study of canned goods. Get bulletins from the government which are suggested in Vol. VI, page 522.

Second Week. Discuss canning clubs, and if possible, organize such a club in your school. (See Vol. VI, page 521.)

Third Week. Study candy. (See Vol. VI, page 520.)

Fourth Week. Study foods. (See Vol. VI, pages 486-492.)

MARCH

First Week. Review lesson on corn given in this grade in September.

Second Week. Continue the study of corn. *First day* — Preparation of the soil. (See Vol. IV, page 507.) *Second day* — Selection of the seed. (See Vol. IV, page 507.) *Third day* — Planting. (See Vol. IV, page 508.) *Fourth day* — Tillage of the growing plants. (See Vol. IV, pages 509-510.) *Fifth day* — The car and the flowers. (See Vol. IV, page 511.)

Third Week. Give character-building lesson on corn given in Vol. IV, page 593.

Fourth Week. Study the acorn. Use this to illustrate a moral lesson. (See Vol. IV, page 594.)

APRIL

First Week. Study ventilation of schoolroom and home. (See Vol. III, page 97.)

Second Week. Study the formation of dew, fog and clouds. (See Vol. II, pages 23-24; Vol. IV, page 568.)

Third Week. Study means of beautifying the school grounds. (See Vol. III, page 115.)

Fourth Week. Arbor Day. (See *Index* for Arbor Day programs and material.)

MAY

First Week. Study spring flowers.

Second Week. Study the Canada thistle. (See Vol. II, page 44; Vol. VI, page 126.)

Third and Fourth Weeks. Study grains and grasses. (See Vol. VI, page 59, and *Index.*)

JUNE

First Week. Study the legumes. (See Vol. VI, page 62.)

Second Week. Study crop rotation. (See Vol. VI, page 70.)

PLANS FOR SIXTH GRADE

SEPTEMBER

First Week. Study the mosquito. *First day* — Discuss its life history. (See page 550.) *Second day* — the eggs. *Third day* — The larva. *Fourth day* — The pupa. (See page 551.) *Fifth day* — The perfect insect. (See page 552.)

Second Week. Continue study of mosquito, discussing the malaria-bearing and other disease-carrying species (see page 553), and practical methods of exterminating the pests. (See page 552.)

Third Week. Begin study of the farmer's enemies. Study the San Jose scale. (See Vol. VI, page 137.)

Fourth Week. Study the Hessian fly, parasitic insects and insect enemies. (See Vol. VI, page 139.)

OCTOBER

First Week. Study rusts and smut. (See Vol. VI, pages 130-131.)

Second Week. Study potato blight and molds (see Vol. VI, pages 132-133) and the cabbage worm. (See Vol. VI, page 135.

Third Week. Study the coddling moth. (See Vol. VI, page 136.)

Fourth Week. Study the boll-weevil.

THE BOLL-WEEVIL

The boll-weevil, the cotton plant's worst enemy, was first discovered in the United States, near Brownsville, Texas, in 1892. Since then it has steadily marched north and eastward until it has covered practically all of the cotton-producing section of the country. This pest decreases the cotton yield of the states about 400,000 bales annually.

The weevil, which is a grayish, hard-shell beetle, less than one-fourth of an inch long, deposits its eggs in punctures made in the growing buds of the cotton plant. The larvae feed upon and live within the boll, destroying the cotton fibre in the boll which becomes dwarfed and produces no cotton. The larva becomes a full-fledged weevil in about four weeks. There is a constant succession of generations from the earliest days of spring until the severest frosts. The number becomes great and once a field becomes infested about three-fourths of the crop will be destroyed.

As in the case of all other pests, cleanliness will exterminate the weevil. In the fall the dead stalks should be uprooted and burned, together with the fallen bolls and squares. The grass and brush at the ends of the rows and on the roadside should be burned. The decaying and fallen trees and underbrush in the adjoining timbers should also be burned. The fields should be plowed deep in the fall and the ground prepared for an early crop. The plants should be sprayed with a poison solution of one pound of arsenate of lead in fifty gallons of water when the earliest buds are forming. (See *Insecticides*, Vol. VI, page 143.)

Birds, especially quail, should be protected and encouraged to remain in the cotton belt. Turkeys and quail are the boll-weevil's natural enemies.

NOVEMBER

First Week. Begin study of cotton. Study primitive and modern methods of weaving. (See Vol. VI, pages 150-155.)

Second Week. Study modern machinery used in the cotton industry. (See Vol. VI, page 153.)

Third Week. Study the organization and management of the factory. (See Vol. VI, page 156.)

Fourth Week. Study the by-products of the cotton plant. (See Vol. VI, page 160.)

DECEMBER

First Week. Study methods of heating and methods of determining temperature. (See Vol. III, pages 94-96.)

Second Week. Study ventilation — effects of foul air and tests for foul air. (See Vol. III, page 97.)

Third Week. Study methods and devices for ventilation. (See Vol. III, pages 98-103.)

Fourth Week. Study holly and mistletoe, as outlined for the same week in fifth grade.

JANUARY

First Week. Study the raccoon. (See page 583.)
Second Week. Study the fox. (See page 582.)
Third Week. Study the woodchuck. (See page 584.)
Fourth Week. Study the tree frog. (See page 586.)

FEBRUARY

Study the bird homes, using the following types:
First Week. Home of the grebe or diver. (See page 591.)
Second Week. Home of the sand-bank swallow. (See page 590.)
Third Week. Home of the cliff swallow. (See page 591.)
Fourth Week. Home of the burrowing owl. (See page 588.)

MARCH

Study nature's cave dwellers, using the following as types:
First Week. Home of seal. (See page 589.)
Second Week. Home of the rabbit. (See page 586.)
Third Week. Home of the prairie dog. (See page 587.)
Fourth Week. Home of the bear. (See page 588.)

APRIL

First Week. Study the dandelion and other spring flowers not previously studied.

Second Week. Study the spring weeds. (See Vol. VI, page 123.)

Third Week. Study poisonous plants — poison ivy, poison oak, etc.

Fourth Week. Observe and study the buds and the new leaves. (See page 521.)

MAY AND JUNE

The remainder of the term should be spent in studying fertility of soil (see Vol. VI, pages 9-19), and testing seed for spring planting. The school will be, as it should, a real, vital influence in the community if the teacher will have the patrons send samples of their seed corn and other seeds to school to be tested. Every school, city or country, in this nation, should be an agricultural experiment station on a small scale.

PLANS FOR SEVENTH GRADE

The economic features of the subjects should be strongly emphasized in the study of plants and animals in this grade.

SEPTEMBER

First Week. Study the sunflower. Have whole plant for observation. Describe roots, stalks, leaves, blossom. The sunflower is state flower of what states? Why harmful? Value as chicken feed. Are scientists satisfied that the real mission of the sunflower has been discovered?

Second Week. Study our national flower — the goldenrod — in the same manner.

Third Week. Study cocklebur in same manner. What harm does this plant do? How many seeds in each pod? How do these seeds germinate? Has this plant any known value?

Fourth Week. Study pitcher plants. (See Vol. IV, page 578.) Explain how these plants trap the insects for food.

OCTOBER

Study life history of economic plants, using the following as types:

First Week. Wheat. (See Vol. VI, page 49.)

Second Week. Rye. (See Vol. VI, page 57.)

Third Week. Oats. (See Vol. VI, page 53.)

Fourth Week. Coffee. (See Vol. VI, page 165.)

NOVEMBER

Study economic value of birds, using the following as types:

First Week. The robin. (See Vol. VI, page 140; Vol. II, page 64.)

Second Week. The woodpecker and the crow. (See Vol. VI, page 141.)

Third Week. The sparrow and the blackbird. (See Vol. VI, page 140.)

Fourth Week. Chickadee, downy woodpecker and scarlet tanager. (See Vol. V, page 502.)

DECEMBER

Continue study of economic value of birds.

First Week. The wren and the cuckoo. (See Vol. V, page 501.)

Second Week. The quail and the screech owl. (See Vol. V, page 502.)

Third and Fourth Weeks. Study economic value of other insect-eating animals. (See Vol. VI, page 142.)

JANUARY

Study structure of birds, using outline on pages 524-525 and diagrams on pages 526-527.

First Week. The head and neck.

Second Week. Wings and legs.

Third Week. Tail and feathers.

Fourth Week. Review parts and prepare written work. (See pages 525-526.)

FEBRUARY

Study classification of birds as outlined on pages 526-527, emphasizing economic value of each class.

First Week. Scratchers and pigeons.

Second Week. Birds of prey and parrots.

Third Week. Cuckoos, kingfishers and woodpeckers.

Fourth Week. Swifts — humming birds and perching birds.

MARCH

First Week. Prepare charts for bird-observation records and begin observations. (See page 533.)

Second Week. Study habits of birds. (See page 529.)

Third Week. Identification marks and colors of birds. (See page 530.)

Fourth Week. Permanent residents and winter visitors. (See page 531.)

APRIL

First Week. Migration of birds. (See page 532.)

Second Week. Protection of bird nests and young. (See page 534.)

Third Week. Study bird enemies. (See pages 534-535.)

Fourth Week. Study plans of making bird houses and attracting birds. Adopt the slogan, "A bird house for every home."

MAY

First Week. Study fish in the lakes, streams and ponds in locality. (See Vol. II, page 66.)

Second Week. Study the state and Federal fish and game laws.

Third Week. Have pupils build aquariums. (See Vol. V, page 352; Vol. II, page 68.)

JUNE

First and Second Weeks. Review the work given during the year.

PLANS FOR EIGHTH GRADE

SEPTEMBER

Begin the study and classification of fruits.

First Week. Food value of dried fruits, apricots, prunes, peaches, etc. (See Vol. VI, page 506.)

Second Week. The propagation of fruit trees. (See Vol. VI, page 75.)

Third Week. The how and why of pruning fruit trees. (See Vol. VI, page 76.)

Fourth Week. Pruning apple trees and peach trees. (See Vol. VI, page 77.)

OCTOBER

First Week. Pruning the raspberry, blackberry and strawberry. (See Vol. VI, page 79.)

Second Week. Take up the study of the grape. (See special study by Dr. C. F. Hodge, Vol. II, page 92.) Discuss the economic value (see Vol. II, page 105), and artistic value (see Vol. II, page 102) of the grapevine and the part it has probably played in the civilization of man. (See Vol. II, page 93.)

Third Week. Study methods of making grape layer. (See Vol. II, page 95.)

Fourth Week. Study the seedling. (See Vol. II, pages 97-100.)

NOVEMBER

First Week. Study cud-chewing animals. Use the cow as a type. (See Vol. II, page 78; Vol. VI, page 81.)

Second Week. Study animals that destroy noxious weeds and insects, using porcupine, bat and weasel as types.

Third Week. Study insect pests, from the economic point of view. (See Vol. VI, page 139.)

Fourth Week. Study game laws and bird laws. Also, food of birds. (See Vol. II, page 52.)

DECEMBER

Study characteristics of chief orders of animals.

First Week. Rodents. (See Vol. IV, page 540; Vol. II, page 83.)

Second Week. Carnivorous animals. (See Vol. II, pages 81-82.)

Third and Fourth Weeks. Hoofed animals. (See Vol. II, page 73; Vol. VI, page 81.)

JANUARY

First Week. Study the mechanical powers. (See Vol. IV, page 554.)

Second Week. Study the lever. (See Vol. IV, page 555.)

Third Week. Study the screw and the jackscrew. (See page 559.)

Fourth Week. Study the wheel-and-axle and the inclined plane. (See page 558.)

FEBRUARY

Study gases and liquids.

First Week. Elasticity of the air. (See page 560.)

Second Week. Pressure of air. (See page 561.)

Third Week. Pumps. (See page 562.)

Fourth Week. Weight, pressure and buoyant force of liquids. (See pages 563-564.)

MARCH

Take up the study of the weather.

First Week. Winds. (See *Index.*)

Second Week. Humidity and the dew point. (See page 567.)

Third Week. Clouds and rainfall. (See page 568.)

Fourth Week. Weather bureau and maps. (See page 569.)

APRIL

First Week. Study the robin. (See Vol. II, page 64.)

Second Week. Study the cow bird. (See Vol. II, page 129.)

Third Week. Study sound. (See Vol. II, page 25.)

Fourth Week. Study light. (See Vol. III, pages 103, 175.) Study lenses, optical instruments, cameras, etc.

MAY

First Week. Study the human eye and its care. (See Vol. III, page 187.)

Second Week. Study the teeth and their care. (See Vol. III, page 194.)

Third Week. Study the ear and its care. (See Vol. III, page 193.)

Fourth Week. Study the value of physical exercise. (See Vol. III, page 274.)

JUNE

First Week. Study contagious diseases and means of prevention. (See Vol. III, page 180.)

Second Week. Give special lessons in first aid to the injured. (See Vol. III, page 183.)

CHALDEAN

GRECIAN

THE FATE OF EMPIRES
DEPENDS UPON THE
EDUCATION
OF YOUTH
ARISTOTLE

MEDIEVAL

COLONIAL

THE SECRET OF EDUCATION LIES IN RESPECTING THE PUPIL

EMERSON

PIONEER

MODERN

T.W. STEVENS